M-JEM
MALAYSIAN JOURNAL OF EMERGENCY MEDICINE
eISSN : 2289 - 6147

Supplementary Issue
7th Issue Volume 6 (Supplementary 1)

"Evolve, Enrich, Excel"
7th National Emergency Critical Care Symposium (NECCS)
& Advanced PoCUS Boot Camp 2024

20th-21st February 2024

Casuarina Convention Centre,
Casuarina@Meru Ipoh, Perak, MALAYSIA

IECCS

7th NECCS Critical Care Symposium & Advanced PoCUS Boot Camp 2024

KEMENTERIAN KESIHATAN MALAYSIA

EDITORS

POSTER PRESENTATION

001

ACCURACY OF POINT OF CARE LUNG ULTRASOUND IN DETECTING SEVERITY OF CONFIRMED COVID-19 PATIENTS IN MAKESHIFT TREATMENT CENTRE: A RETROSPECTIVE COHORT STUDY

Sheue Fen Ong[1,2,3] MD DrEmMed, Yung Ban Cheng[1,4], Ahmad Fareez Roslan[1], Roslanuddin Bin Mohd Salehuddin[1], Mohd Sidqi Mohd Soel[2,5] MD DrEmMed, Izni 'Izzati Binti Rusli[6], Fatahul Laham Bin Mohamed[1]

[1]Emergency & Trauma Department, Hospital Sultanah Bahiyah, Kedah, Malaysia
[2]Clinical Fellowship in Emergency Medicine, College of Emergency Medicine, Malaysia
[3]Clinical Fellowship in Emergency Medicine, University of Toronto, Canada
[4]University of Malaya, Malaysia
[5]Emergency & Trauma Department, Hospital Sungai Buloh, Selangor, Malaysia
[6]Department of Radiology, Hospital Sultanah Bahiya, Kedah, Malaysia
Corresponding author email: sheuefen84@yahoo.com

Background: Malaysia has entered the third wave of COVID-19 pandemic in early October 2020. This cause an emerging need to develop a protocol for accurate triaging and risk stratifying of the COVID-19 patients at the first contact, so that the right patient can be admitted to the right place. Ultrasound lungs has been evaluated in various studies due to its portability, ease of access and reproducible results as a tool of serial monitoring of the disease progress. In view of this, this paper ventures on whether Point-of-Care Ultrasound lungs is the modality of choice for quick, accurate and adequate assessment, in the effort of field triaging and risk stratifying patients into respective clinical staging.

Methods: This is a retrospective cohort study. Data was collected from the patients that being admitted to the Makeshift Treatment Centre during the period of November 1, 2020 to December 31, 2020. Specificity, sensitivity, PPV, NPV, false positives and negatives are calculated to see the correlation between ultrasound lung score and chest x-ray. Area under the receiver operating curve is plotted to see the association between ultrasound lung score, chest x-ray and admission.

Results: There is significant correlation between LUS-CLUE and CXR-BRIXIA with $p<0.001$. Lung ultrasound demonstrated high predictive accuracy in identifying severity of COVID-19 infection which warrants admission. The area under curve revealed a high association of 0.973. LUS-CLUE also shows significant correlation with SOFA score with $p<0.001$.

Conclusions: Lung ultrasound can be used as a triaging tool to predict the severity of COVID-19 and also as a temporary substitute for area that have difficult access to chest x-ray or computered tomography.

Keywords: COVID-19, chest x-ray, triaging, SOFA, CLUE, POCUS, lung ultrasound, emergency

Study registration: This study is approved by the Ministry of Health Medical Research Ethics Committee (MREC) with the NMRR ID: NMRR-21-516-58813.

002

'IT'S A 'SLOW VT'?' CASE REPORT OF REPERFUSION ARRYTHMIA IN ACUTE STEMI

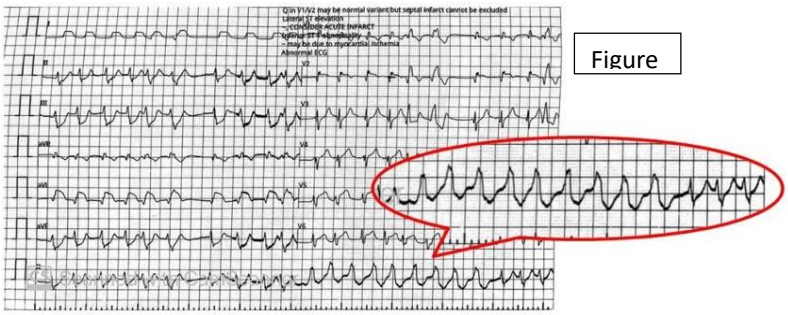
Ahmad Izwan Sapri[1], Mohd Hilmi Che Aun[2]

[1]Jabatan Kecemasan Dan Trauma Hospital Alor Gajah, Melaka [2]Jabatan Kecemasan Dan Trauma Hospital Melaka, Melaka

Corresponding author email: ahmizwan@gmail.com

Introduction: Broad complex tachyarrythmia is usually malignant but there is an atypical benign form seen in reperfusion phase of myocardial infarction (MI) known as accelerated idioventricular rhythm (AIVR).

Case Presentation: Sixty-year-old male presented with severe angina with diaphoresis. Upon presentation, patient was pale and hypotensive. Generalized crepitation heard upon auscultation and electrocardiogram shows ST segment elevation in anterior and lateral leads. Patient diagnosed with acute anterolateral STEMI Killip 4 and treated with intravenous streptokinase of which patient responding. Subsequent electrocardiogram shows a broad QRS complex at 100 bpm, initially misinterpreted as "slow ventricular tachycardia (VT)." Patient being started on intravenous amiodarone. Emergency physician consult corrected the diagnosis to AIVR. Anti-arrhythmic was discontinued, patient exhibited sinus rhythm in subsequent electrocardiograms.



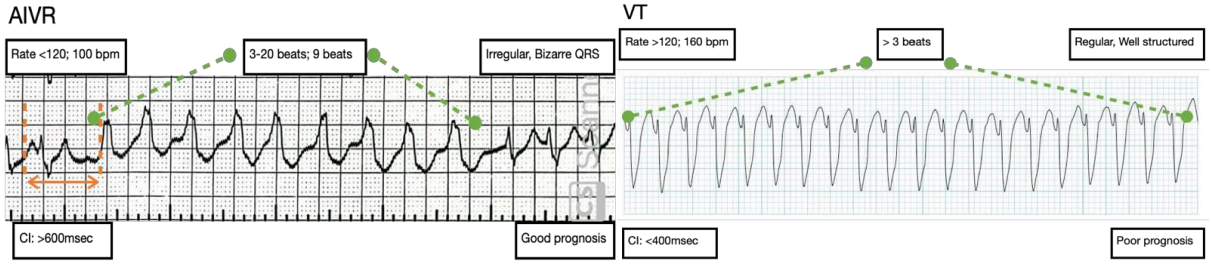
Figure

Discussion: It is important to accurately distinguish AIVR from ventricular tachycardia to avoid unwarranted treatments that may compromise patient hemodynamic. AIVR characterized by at least three consecutive premature beats, gradual onset and termination, and competition with sinus rhythm, often occurs during or post-thrombolysis, indicating successful reperfusion. It is crucial to differentiate AIVR from VT given AIVR's generally well-tolerated nature and favorable prognosis. The discussion highlights the diagnostic challenges, particularly when echocardiogram findings are misinterpreted as VT. Administering intravenous amiodarone in such instance may results in adverse effects, including hypotension

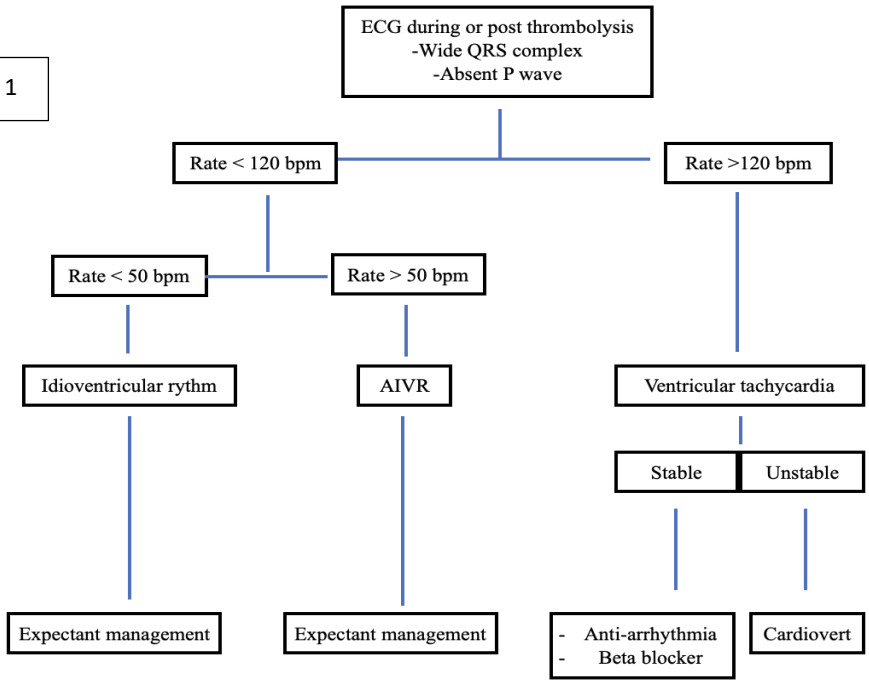
and bradycardia. AIVR, being hemodynamically well-tolerated, typically requires no specific treatment beyond addressing the underlying heart disease.

Table 1

AIVR	COMPONENT	VT
<120 bpm	**Rate**	>120 bpm
Bizarre	**QRS complex**	Well structured
Irregular	**Regularity**	Regular
3-20	**Beats**	>3
> 600msec	**Coupling interval**	< 400msec
Good	**Prognosis**	Poor
Broad QRS Absent P wave + Capture beat + Fusion beat		



Algorithm 1



Conclusion: Recognizing reperfusion arrhythmias like AIVR is important in reperfusion therapy for acute myocardial infarction. Clinicians must remain cautious to avoid misdiagnoses and unnecessary treatments that could exacerbate clinical instability.

Reference:

1. R. M. Norris, C. J. Mercer, and S. E. Yeates, 'Idioventricular Rhythm Complicating Acute Myocardial Infarction',

   British Heart Journal 32, no. 5 (September 1970): 617–21, https://doi.org/10.1136/hrt.32.5.617.

2. Gangwani MK, Nagalli S. Idioventricular Rhythm. [Updated 2023 Jul 24]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: Https://Www.Ncbi.Nlm.Nih.Gov/Books/NBK554520/', n.d.

3. 'Riera AR, Barros RB, de Sousa FD, Baranchuk A. Accelerated Idioventricular Rhythm: History and Chronology of the Main Discoveries. Indian Pacing Electrophysiol J. 2010;10(1):40-48.', n.d.

4. W. Grimm, J. Hoffmann, and B. Maisch, '[Accelerated idioventricular rhythm]', *Zeitschrift Fur Kardiologie* 83, no. 12 (December 1994): 898–907.

5. 'Gorgels AP, Vos MA, Letsch IS, Verschuuren EA, Bär FW, Janssen JH, Wellens HJ. Usefulness of the Accelerated Idioventricular Rhythm as a Marker for Myocardial Necrosis and Reperfusion during Thrombolytic Therapy in Acute Myocardial Infarction.Am J Cardiol. 1988; 61:231–', n.d.

6. N. de Soyza et al., 'Association of Accelerated Idioventricular Rhythm and Paroxysmal Ventricular Tachycardia in Acute Myocardial Infarction', *The American Journal of Cardiology* 34, no. 6 (November 1974): 667–70, https://doi.org/10.1016/0002-9149(74)90155-6.

7. Deepak Doshi and Ravi Jayawardana, 'Amiodarone-Induced Life-Threatening Refractory Hypotension', *American Journal of Case Reports* 16 (2015): 617–20, https://doi.org/10.12659/AJCR.893920.

8. S. Talbot and M. Greaves, 'Association of Ventricular Extrasystoles and Ventricular Tachycardia with

   Idioventricular Rhythm', *British Heart Journal* 38, no. 5 (May 1976): 457–64, https://doi.org/10.1136/hrt.38.5.457.

9. Norris, Mercer, and Yeates, 'Idioventricular Rhythm Complicating Acute Myocardial Infarction'.

003

TRAUMATIC INFERIOR VENA CAVA INJURIES IN CHEST TRAUMA

Asha Parveen, Siti Sarah binti Md Zhahir

Corresponding author email: ashamaddy@yahoo.com

Introduction: Chest trauma associated with injuries of the inferior vena cava (IVC) are not so common as it is retroperitoneal. Evaluation, recognition and intervention are the mainstay in managing chest trauma.

Case: A 30-year-old gentleman presented with multiple stabs wound over anterior chest. GCS on arrival E3, V2, M1 with bleeding over the stab wounds. His blood pressure was 98/49 mmHg and heart rate of 102 beats per minute. Patient was intubated for airway protection and massive transfusion protocol was initiated. Noted 3 penetrating wounds over his anterior left chest region measuring with reduced air entry over the left chest. Three-way occlusive dressing and chest tube was inserted on the left chest. Free fluid at Morrison`s pouch and pericardial fluid measuring about 2cm in thickness. In view of his unstable condition, patient was pushed for wound exploration. Post operative noted 3 stab wounds at the chest, 5cm wound at the middle of chest, causing supradiaphragmatic IVC tear 0.5x1cm with small laceration at the diaphragm and liver beneath. Another 3cm wound at left middle parasternal causing breach in pericardium 3x1cm and internal mammary artery cut. And another 3cm wound at lower parasternal chest, but otherwise no penetration to the heart. Adhesiolysis of left lung was performed and 2 chest drain were inserted in the left thorax. He survived and his estimated blood loss was 7 litres.

Pictures 1: Injuries sustained by the patient over the anterior chest region.

Discussion: The depth of injury and associated organs and vessels involved cannot be determined until the injury is explored thoroughly. Depending on the penetrating chest trauma, immediate operative intervention may be needed, making early diagnosis integral to survival. The most common cause of death in chest trauma is uncontrollable intraoperative haemorrhage.

Conclusion: Prompt and immediate intervention is needed in managing penetrating chest trauma. The timely management of this patient increased his survival rate.

References:

1. Okyere I, Yorke J, Agbeko EA, Forson PK, Bonney J. Inferior vena cava injury: survival of a rare case. Ghana Med J. 2019 Jun;53(2):181-183. doi: 10.4314/gmj. v53i2.14. PMID: 31481815; PMCID: PMC6697775.
2. Zia U.R, Inferior vena cava injuries - a clinical review. J Pak Med Assoc. 2020 Jun;70(6):1069-1071. doi: 10.5455/JPMA.21107. PMID: 32810108.
3. Mohammed A., Rachid J., Yassine M., Houssam B. Inferior vena cava injury after blunt trauma: Case report,International Journal of Surgery Case Reports,Volume 81,2021,105791,ISSN 2210-2612, https://doi.org/10.1016/j.ijscr.2021.105791. (https://www.sciencedirect.com/science/article/pii/S2210261221002923)
4. Matsumoto S, Jung K, Smith A, Coimbra R. Management of IVC Injury: Repair or Ligation? A Propensity Score Matching Analysis Using the National Trauma Data Bank. J Am Coll Surg. 2018 May;226(5):752-759.e2. doi: 10.1016/j.jamcollsurg.2018.01.043. Epub 2018 Mar 1. PMID: 29408285.
5. Jain A, Sekusky AL, Burns B. Penetrating Chest Trauma. [Updated 2022 May 25]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK535444/

004

A RARE CASE REPORT OF MYCOTIC ANEURYSM

Yogitagavari Yoganathan, Ida Zarina Zaini

Corresponding author email: yogvi_5@yahoo.com

Introduction: Abdominal aortic aneurysm is a segmental, full thickness dilatation of the abdominal aorta exceeding the normal vessel diameter by 50% even though an aneurysm diameter of 3.0cm is commonly regarded as the threshold (Kent 2014). Aortic aneurysmal is regarded as a distinct degenerative process involving all layers of the vessel wall whereby the pathophysiology is characterized by 4 events.

Case Presentation: 61 years old Chinese gentleman was brought in to emergency department with a chief complain of abdominal pain for 2 weeks intermittently, mainly at the lower abdomen. On examination, patient was hypertensive, tachycardic and febrile. Per abdomen, patient had a generalised tenderness**.** A bedside pocus ultrasound was done and noted the abdominal aorta diameter is 3x5cm with a vague hyperechoic mass seen within but no obvious flap seen. Patient then proceeded with imaging examination of CT angiography of the thorax and abdominal aorta. The radiological investigation showed the findings of aortic aneurysm at the level of left renal ostium with mural thrombus (size 4.8x3.2x3.8cm) causing almost total obliteration of the left renal artery.

Discussion: The diagnosis of the mycotic aneurysm has always been challenging as there is no specific diagnostic criteria and it has always been based on a few specifications. First, it's based on the clinical presentation of the patient, whereby the patient presenting with fever, pain, being elderly with concomitant cardiovascular disease or in immunosuppressive state. Secondly, if patient has an increased infective marker such as raised CRP, ESR, leucocytosis, or positive blood culture (Sörelius & Di Summa 2018). Thirdly, the radiological findings which are more suggestive of mycotic aneurysm are saccular aneurysm with lobulated contours, soft tissue inflammation surrounding the vessel wall, intramural air or air collection around the blood vessel and perianeurysmal fluid collection (Azizi et al. 2004). Fourthly are intraoperative findings.

Conclusion: Mycotic aneurysm is a rare occurrence nowadays due to the well-developed spectrum of antibiotics. The diagnosis of it can be challenging itself and bedside ultrasound and further imaging can aid in the way to the diagnosis

References:

1. Azizi, L., Henon, A., Belkacem, A., Monnier-Cholley, L., Tubiana, J.-M. & Arrivé, L. 2004. Infected Aortic Aneurysms: Ct Features. *Abdominal imaging* 29: 716-720.
2. Kent, K. C. 2014. Abdominal Aortic Aneurysms. *New England Journal of Medicine* 371(22): 2101-2108.
3. Sörelius, K. & Di Summa, P. G. 2018. On the Diagnosis of Mycotic Aortic Aneurysms. *Clinical Medicine Insights: Cardiology* 12: 1179546818759678.

005

SEEING BEYOND THE SURFACE: A CASE REPORT OF DIAGNOSING GLOBE RUPTURE INJURY WITH POINT-OF-CARE ULTRASOUND

Shin Loong Soong[1], Muhammad Aizat Bin Osman[1], Nin Ern Tan[2]

[1] *Department of Emergency and Trauma, Hospital Tangkak, Tangkak, Johor, Malaysia*

[2] *Department of Emergency and Trauma, Hospital Segamat, Segamat, Johor, Malaysia*

Corresponding author email: s.shinloong@gmail.com

Introduction: Globe rupture, is a critical ocular emergency, necessitates prompt diagnosis and intervention.[1] This report examine the role of Point-Of-Care Ultrasound (POCUS) in early ocular trauma detection, emphasising its utility in resources limited settings to expedite diagnoses and interventions.

Case Presentation: A 17-year-old man involved in a motor vehicle accident, presented multiple facial traumas and right periorbital haematoma that hindered eye examination. POCUS revealed scleral discontinuity, collapsed anterior chambers and vitreous haemorrhage of right ocular structure, suggesting a globe rupture injury, which was later confirmed with CT. Prompt ophthalmology referral to tertiary hospital led to timely interventions.

Discussion: Globe rupture injuries poses a diagnostic challenge in certain circumstances and may be overlooked due to the concurrent injuries detected in primary survey.[2] While CT is the primary diagnostic modality for globe rupture, POCUS, being a readily available non-invasive bedside test, offers a promising alternative tool especially in resource limited settings in identifying the relevant injury. Besides, POCUS demonstrated high sensitivity and specificity in identifying globe rupture, as evidenced by meta-analysis.[3] However, the role of POCUS in ocular trauma remains controversial, as exertion of pressure on eye may exacerbate pre-existing injury. As such, proper technique and training on ocular POCUS are crucial.

Conclusion: Globe rupture is a time sensitive diagnosis, warrants immediate surgical repair to prevent further complications. Therefore, prompt detection by POCUS will be beneficial to aid the diagnosis.

Declaration: Patient's consent was obtained. There is no conflict of interest in this case report

References:

1. Mohseni M et al. StatPearls (Internet). 11 June 2023.

2. Ojaghihaghighi S et al. Ann Emerg Med. 2019 Sep;74(3):365-371.

3. Propst S L et al. JAMA Netw Open. 2020;3(2):e1921460.

006

TOWARDS A MORE "VISIBLE" DIFFICULT AIRWAY MANAGEMENT. A CASE OF VAFI OF A TRACHEAL STENOSIS

Atikah N, Hafis MS,Fadhly MY

Corresponding author email: gran09a@gmail.com

Introduction: Various scoring systems are available to predict difficult airway with variable accuracies although the actual difficulties will be determined by the visualisation of the vocal cords during laryngoscopy. Flexible fiberoptic bronchoscopy is a tremendously valuable tool that should be equipped within every difficult airway trolley.

Case: 73-year-old male, known case of COAD, history of intubation and ICU admission 3 months prior due to severe AECOAD presented to ED with episode of shortness of breath precipitated by URTI. He underwent Rapid Sequence Intubation (RSI) for severe COAD not relieved by bronchodilator therapy & in imminent respiratory arrest. Video laryngoscopy was performed using CMAC and vocal cords were clearly visualised. However, multiple intubation attempts were unsuccessful as the ET tube could not pass beyond the vocal cords. The operator announced a situation of "Cannot intubate, can ventilate" airway. Video laryngoscope-assisted flexible intubation (VAFI) was attempted. Bronchoscopy revealed a tapered and strictured airway at the level of tracheal rings 4 and 5. LMA size 4 was inserted. Urgent CT neck was performed and revealed a focal circumferential stenosis at T1 level and patient was sent to OT for tracheostomy.

Discussion: Post-intubation tracheal stenosis is a rare but serious complication caused by cicatricial healing of an iatrogenic transmural airway injury. The use of flexible bronchoscopy enables the operator to visualise and diagnose the condition straight away. This enables the operator to institute the most appropriate airway treatment while avoiding ineffective and potentially harmful intervention such as cricothyroidotomy during the difficult airway management.

Conclusion: Various scoring systems can help predict difficult airway with an acceptable level of accuracy at best. Flexible fibreoptic bronchoscopy enable the operator to visualise and diagnose tracheal stenosis and guide subsequent emergency airway management.

007

DIFFERENT PULSE VOLUME AND BLOOD PRESSURE FOR EACH HAND?

NARONG REED A/L PREM[1], A.H KHAIRULNIZAM[1]

[1] *EMERGENCY AND TRAUMA HOSPITAL TENGKU FAUZIAH KANGAR PERLIS MALAYSIA*

Corresponding author email: aronreed123@gmail.com

Introduction: Another mimicker of Aortic Dissection is the Aortic Thrombosis with embolism. Diagnosing Aortic Thrombosis in PHC setting might be challenging due to limited time, resources and equipment. But details and careful history with focused assessment could help the PHC Responder to diagnosed the Aortic Thrombosis with Embolism.

Case Report: We would like to share a case report of Aortic Thrombosis that initially were thought of Aortic Dissection by the PHC Team. The team responded to a 55 years old man with a complaint of severe abdominal pain for the past 2 days. The pain located at the epigastric region and lower back. He had profuse sweating and appeared restless in the ambulance. The pulse volume was good on the right side but feeble on the left. There was discrepancy in Blood Pressure reading, 145/81 mmHg (right arm) and 81/41 mmHg (left arm), PR : 109 bpm, SpO2: 97% under Room Air, Respiratory Rate :24 breath per min. Pain Score : 10/10. Patient was given supplemental oxygen via NP Oxygen 3L/min, IV Tramadol after consultation via online medical direction. IVD 1 pint NS was initiated at the PHC level. Bedside Ultrasound and portable CXR revealed no evidence of Aortic Dissection. CTAA result showed there is descending thoracic aorta intramural thrombus and intraluminal floating thrombus/ emboli within multiple arterial vessels.

Discussion: A proper physical examination should be done carefully in order to detect hidden life-threatening conditions early so that proper and fast treatment can be done to this patient in order to prevent high chances of mortality.

Conclusion: In conclusion, aortic intramural thrombus is a serious medical problem that requires prompt identification and proper treatment. Prompt intervention and a comprehensive approach to treatment are essential in enhancing outcomes and reducing problems related to this illness.

Keywords: false lumen, aortic dissection, aneurysm, thrombus

008

PARAPLEGIA IN ACUTE THROMBOSED ABDOMINAL AORTIC ANEURYSM

K Khairuddin, MFM Shukri

Hospital Universiti Sains Malaysia

Introduction: Acute aortic occlusion (AAO) is an emergent vascular condition not encountered routinely. Given its varied presentations, including neurovascular deficits, and mimicking an acute abdomen, the diagnosis is often delayed causing increased morbidity and mortality. We present a case of acute thrombosed abdominal aortic aneurysm (AAA) masquerading as sudden onset paraplegia in an 84-year-old man. Sudden thrombosis of an AAA is an uncommon condition. Its incidence is reported to be 0.6 to 2.8% of all surgically managed AAA cases [1]. For the most part, patients with thrombosed AAA present with symptoms of acute limb ischemia, including pain, coolness, paraesthesia, absent pulses, and mottling of the skin [2].

The aim of this report is to describe an unusual case of acute thrombosis of AAA with paraplegia by using ultrasound in emergency department. Point-of-care ultrasound (POCUS) can play a crucial role in the evaluation and diagnosis of an acute thrombosed abdominal aortic aneurysm. The use of POCUS in acute settings can aid in rapid decision-making and help initiate appropriate interventions promptly. However, the interpretation of POCUS findings requires expertise, and it should be performed by trained healthcare professionals.

Case Presentation: An 84-year-old man, referred from nearby health clinic (Klinik Kesihatan) to our emergency department (ED) for sudden onset of bilateral lower limb weakness (paraplegia) for suspected acute ischemic stroke. His past medical history includes ischemic heart disease on medication. Patient arrived at our centre around 2 hours post insult. There were no complaints of previous abdominal pain, back pain and recent trauma. On physical examination, power for bilateral lower limbs were 0/5 with presence of numbness from buttock down to bilateral foots, with no pulses palpable from dorsalis pedis arteries up to femoral arteries, together with reduced sensation and no signal on doppler. Patient was also having pain from buttock downward to bilateral lower limbs. Otherwise, no pulsatile abdominal mass felt, no back pain, no urinary or bowel incontinence. Bedside POCUS was performed and revealed thrombosed infrarenal AAA measuring around 3.9x4.2x6.5cm causing narrowing of the lumen. Case was referred to vascular surgery team as bilateral acute limbs ischemia with acute thrombosed AAA.

Discussion: Acute thrombosis of AAA is a rare and often devastating complication of aortic aneurysms. Symptoms of acute lower limb ischemia (45.7%) associated with absent femoral pulses (68.6%) are the most common clinical signs [3]. Acute thrombosis of AAA has a low incidence rate of 0.7–2.8% of all surgically managed AAAs. Mortality rates are described as up to 59% in the limited available literature [4].

Acute neurological deficits are a rare primary symptom. In the presented case, paralysis of both legs could have been the result of the anterior spinal artery

syndrome secondary to lumbar artery occlusion [5]. The initial presentation of lower extremity deficits can mislead providers. Several case reports describe the mischaracterization of chronic aortic occlusive disease as sciatica, and acute aortic occlusive disease as a cerebrovascular accident or spinal cord myelopathy [6].

Thorough physical examination and early use of POCUS facilitates recognition of vascular occlusion, redirecting diagnostic momentum away from neurogenic aetiologies. It is noteworthy that the majority of AAO occur infrarenal (75.8%–94.8%). [7] AAO is a rare but potentially devastating vascular emergency. Emergency physicians should consider this aortic pathology in patients presenting to the ED with acute onset lower extremity neurovascular deficits. Diagnostic delay impedes time to revascularization and portends worse patient outcomes with morbidity and mortality rates between 21–74% [8,9]. POCUS is a rapid, accurate, and non-invasive diagnostic imaging modality for patients presenting with aortic pathology. Given its high sensitivity for identifying aneurysms, dissections, and intraluminal thrombus, POCUS is the ideal screening exam for emergent aortic pathology [10,11].

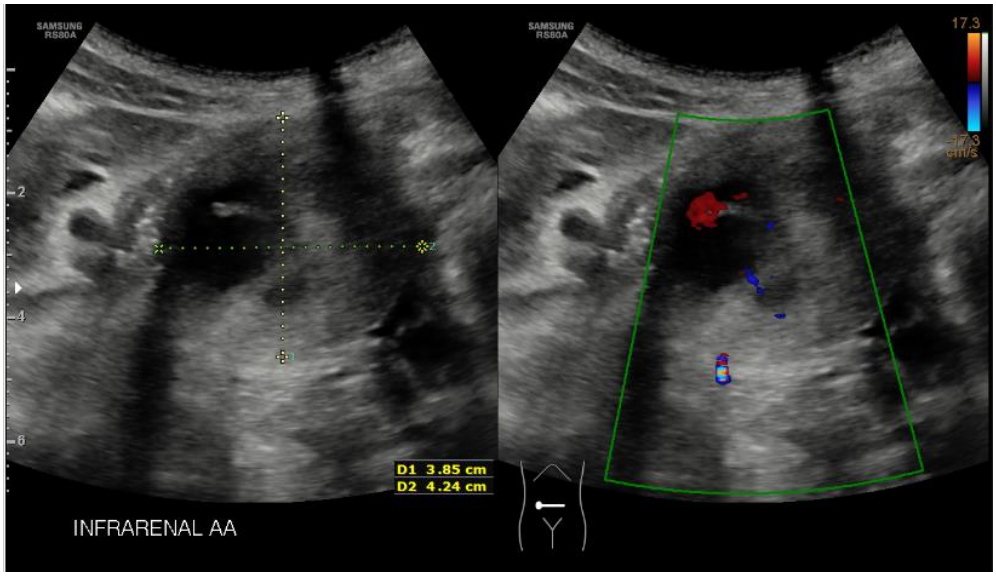


Figure 1. Ultrasound image showing an abdominal aortic thrombus.

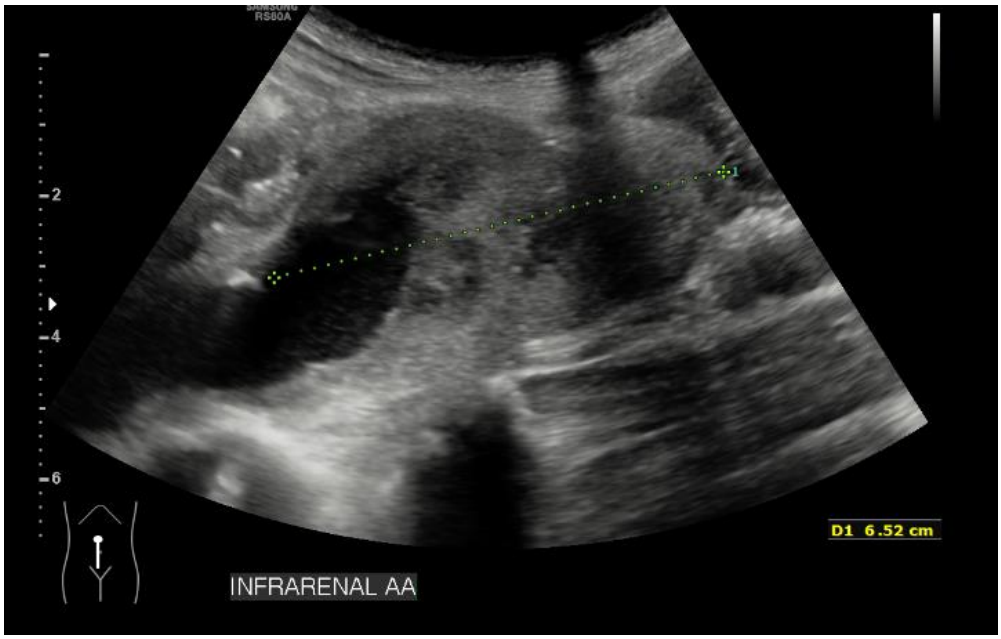


Figure 2. Ultrasound image showing an abdominal aortic thrombus.

Conclusion: It's important to note that paraplegia due to acute limb ischemia is a serious medical emergency, and timely intervention is critical to prevent permanent damage. Emergency physicians should consider this aortic pathology in patients presenting to the ED with acute onset lower extremity neurovascular deficits.

Declaration of patient consent: Family of our patient were fully informed about the publication and Informed Consent was signed by his family.

Competing interests: The authors declare that they have no competing interests.

References

1. Bogie R et al. Eur J Vasc Endovasc Surg. 2008;35(05):590–592.
2. El-Kayali A et al. Ann Saudi Med 200121(5-6):342–343.
3. Suliman A S et al. Vasc Endovascular Surg. 2003;37(01):71–75.
4. Hirose H et al. Angiology. 2000;51(06):515–523.
5. Cervantes J et al. J Cardiovasc Surg (Torino). 1985 Nov-Dec;26(6):598-60.
6. Lai CH et al. Ann Vasc Surg. 2014;28(5):1321.e5–7.
7. Crawford JD et al. J Vasc Surg. 2014;59(4):1044–50.
8. Babu SC et al. Am J Surg. 1987;154(2):206–10.
9. Crawford JD et al. J Vasc Surg. 2014;59(4):1044–50.
10. Gibbons RC et al. Ann Emerg Med. 2017;70:S143
11. Pare JR et al.. Am J Emerg Med. 2016;43(3):486–92.

009

NAVIGATING THE CRISIS: A COMPELLING ACCOUNT OF PERFORMING LIFE-SAVING EMERGENCY CRICOTHYROIDOTOMY IN A PATIENT WITH SUPRAGLOTTIC STENOSIS DURING CARDIAC ARREST

Amir Al-Amin Mustaff[1], Kevin Wong Chuing Shen[1], Norhaya binti Abdullah[1]
[1]*Emergency and Trauma Department, Hospital Pakar Sultanah Fatimah, Muar, Johor, Malaysia.*
Corresponding author: dr.amiralamin@gmail.com

Introduction: Patients with coexisting chronic obstructive pulmonary disease (COPD) and supraglottic stenosis pose a unique emergency airway management challenge. This report emphasizes the complexities involved and the critical role of emergency cricothyroidotomy in ensuring patient's survival.

Case: A 62-year-old male, diagnosed with COPD and currently under investigation for supraglottic stenosis, possibly related to malignancy, presented with an abrupt onset of acute shortness of breath. Despite initial treatment, his condition rapidly deteriorated, necessitating emergency intubation. Multiple attempts failed due to supraglottic stenosis, leading to hypoxia and cardiac arrest. An emergency cricothyroidotomy was performed to secure the airway and achieve return of spontaneous circulation (ROSC). Subsequently, a tracheostomy was done, and the patient was discharged with neurologically intact after six days of hospitalisation.

Discussion: Supraglottic stenosis, though rare [1], poses challenges in emergency airway management because supraglottic stenosis and COPD exacerbation can have overlapping symptoms [2,3]. Standard intubation techniques may fail due to the narrowed supraglottic area, requiring specialized tools and expertise. Emergency cricothyroidotomy, specifically the scalpel-bougie-tube (SBT) technique, proved vital in this case [4,5,6]. A skilled and prepared team is essential for such scenarios.

Conclusion: This case highlights the intricate challenges of managing emergency airways in coexisting COPD and supraglottic stenosis, emphasizing the need for a skilled multidisciplinary team. Life-saving emergency cricothyroidotomy, with the scalpel-bougie-tube technique, contributed to a successful outcome, proving its importance in challenging airway scenarios. Timely recognition, decisive action, and team proficiency are crucial for optimal patient care in emergencies.

Ethical Clearance: Informed consent to use this case report for publication had been obtained from the patient.

References:

1. Stevens et al. The Annals of Otology, Rhinology, and Laryngology, 122(3): 205–209, 2013.
2. Smith et al. American Journal of Hospital Medicine, 8(1): 2-7, 2016.
3. Dreyer et al. Acta Oto-Laryngologica Case Reports, 7(1): 26–29, 2022.
4. Frerk et al. British Journal of Anaesthesia, 115(6): 827–848, 2015.
5. Grudzinski et al. Current Anesthesiology Reports, 11(3): 355–362, 2021.
6. George et al. International Journal of Emergency Medicine, 15(1):24, 2022.

010

EMERGENCY PERICARDIOCENTESIS IN A SETTING OF CARDIAC ARREST; A CASE REPORT OF CARDIAC TAMPONADE IN A STEMI PATIENT POST THROMBOLYSIS

SHAHRIZAN MAJID ALLAPITCHAI[1], LIM WEN TZIEN[1], THAYAHARAN SUBRAMANIAM[1]

[1]HOSPITAL SELAYANG, SELANGOR, MALAYSIA

Corresponding author email: shahrizanmaid92@gmail.com

Cardiac tamponade is a rare complication of myocardial infarction and results in hemodynamic instability. It is a life-threatening condition defined as decompensated cardiac compression due to accumulation of pericardial fluid resulting in increased intrapericardial pressure. Pericardiocentesis is mandatory to remove the pericardial fluids, allow normal ventricular filing and eventually restoring cardiac output. Ultrasound guided pericardiocentesis allow better visualization of needle trajectory and reduces complication rate as compared to blind technique. We present a case of 73-year-old Indian gentleman, with no previous medical illness, presenting to the Emergency Department complaining of sudden onset left sided chest pain for 2 hours with pain score of 8/10. He described the pain as heaviness sensation and associated with dyspnea and sweating. Vital signs were stable and ECG showed ST elevation over V2-V5. A diagnosis of acute anterolateral myocardial infarction (MI) Kilip 1 was made and complemented with bedside point-of-care ultrasound (POCUS). He was counselled for thrombolysis and IV streptokinase was administered. Upon completion of thrombolysis, patient become hypotensive and repeated ECG showed worsening extensive MI with ST elevation over lead II, III, AVF and V2-V6. Immediate bedside POCUS was done revealing large pericardial effusion with right ventricular chamber collapse. Patient remained hemodynamically unstable despite on double inotropes and was counselled for high-risk procedure pericardiocentesis. Subsequently, patient develop cardiac arrest and we proceeded with chest compression and crash intubation. Emergency ultrasound guided pericardiocentesis was performed during resuscitation via the parasternal approach using a high frequency linear ultrasound probe. However, patient succumbed to his illness. This case highlights the importance of POCUS in diagnosing a cardiac tamponade rapidly and assist in the management of our patient.

011

NAVIGATING TRAUMA'S CHALLENGES: FAST, WBCT, AND BEYOND

Mohd Nor Ikhwan Md Adzha[1], Muhammad Munawar Mohamed Hatta[1]
Affiliation: [1] Hospital Canselor Tuanku Muhriz (HCTM)
Corresponding author email: maggy_iq1@yahoo.com

Introduction: Blunt chest and abdominal trauma pose challenges in emergency medicine due to varied clinical presentations. While Focused Assessment with Sonography for Trauma (FAST) is crucial in polytrauma assessment, its limitations can be addressed with the growing availability of whole-body computed tomography (WBCT), enabling comprehensive diagnostics for timely interventions.

Case: A 24-year-old woman involved in a road accident presented with hemodynamic instability after being extricated from a car. She was intubated for airway protection and had reduced air entry on the right side. Extended FAST showed pericardial effusion without tamponade and no intraperitoneal free fluid. WBCT revealed superior mediastinal hematoma, hemopericardium, right hemopneumothorax, bilateral rib fractures, and grade II liver injury. Subsequent CTA revealed a slow venous bleed from the left superior pulmonary vein. She underwent sternotomy, pericardiotomy, and thymectomy, revealing a thymic hematoma and a small laceration at the upper part of the pericardium. Liver injury was treated conservatively. She was discharged well after 8 days of admission.

Discussion: Blunt chest trauma can result in mediastinal hematoma, as observed in our case where it originated from the thymus. Early detection is crucial to prevent extra pericardial cardiac tamponade [1]. The FAST, a valuable tool for rapid haemorrhage diagnosis, may overlook mediastinal hematomas, necessitating consideration of additional views [2]. While WBCT offers a comprehensive assessment in polytrauma, the decision to use it should be individualized, weighing benefits against radiation risks and considering injury mechanism, clinical presentation, and resource availability for optimal patient care [3].

Conclusion: Managing blunt chest and abdominal trauma requires a meticulous approach, highlighting the importance of FAST and advanced imaging such as WBCT to augment its limitations. Balancing the benefits of advanced imaging with associated risks is crucial, emphasizing the necessity for personalized decision-making in trauma care.

References:

[1] Coleman et al. *Chest* 4: 922-924, 1995.
[2] Hsu et al. *Am J Emerg Med* 31(1): 261-263, 2013.
[3] Maghraby et al. *Open Access Emerg Med* 12: 305-313, 2020.

012

POCUS AS GAME CHANGER: UNMASKING THE COMPLICATION OF DECOMPENSATED CCF

Marlene Ing, KK Gan, YL Lee, M Amin Mohidin
Emergency And Trauma Department, Hospital Sultanah Aminah Johor Bahru, Malaysia

Corresponding author email: marlenehappy@yahoo.com

Left ventricle (LV) thrombus is a known complication of congestive cardiac failure (CCF) with incidence ranging from 11-44%. This thrombus could cause arterial embolic complications and accounts for up to 10% of cardioembolic strokes. We are presenting a case of cardioembolic stroke secondary to giant LV thrombus revealed by bedside point of care ultrasonography (POCUS).

A 44-year-old man with underlying ischaemic heart disease was brought to Emergency And Trauma Department (ETD), Hospital Sultanah Aminah Johor Bahru with progressive dyspnoea over 2 days. He was subsequently intubated for type 1 respiratory failure secondary to acute decompensated heart failure. Bedside POCUS showed plethoric IVC, poor cardiac contractility, pericardial effusion, bilateral pleural effusion and a giant LV apical thrombus which has raised the suspicion of the possibility of cardioembolic stroke in this patient. The suspicion was then confirmed by CT scan of the brain which showed the migration of the embolus from initial acute right MCA infarct on Day 1 to acute bilateral MCA infarct in the repeated scan on Day 2.

CCF is a clinical syndrome that accounts for 6-10% of all acute medical admission in Malaysia and is a risk factor for LV thrombus formation and systemic embolism. Paucity of existing screening guideline for early detection of LV thrombus in CCF patients may cause under-detection and poses greater risk of thromboembolic complications. Ultrasonography is easily accessible in most ETD thus we would like to emphasise the vital role of POCUS in routine clinical assessments as it can unmask the hidden threats and improve patient outcomes.

013

LOW PRESSURE CARDIAC TAMPONADE – A MEDICAL EMERGENCY NOT TO BE MISSED

GunasegaranA/L Murugiah, SatiyaA/P Vesulingam

Corresponding author email: gunasegaran81@gmail.com

Introduction: Point of care ultrasound (POCUS) is now widely employed to detect and treat life threatening emergencies. As such, we describe a case whereby POCUS had aided in timely recognizing and managing a life-threatening cardiac mass with tamponade on a patient presenting primarily with breathlessness.

Case summary: A 59-year-old gentleman with diabetes, hypertension and ischemic heart disease was presented to the Emergency Department (ED) with difficulty breathing that had worsened over 4 days. He associated his breathlessness with a central chest pain that had not radiated elsewhere. Patient was bradycardic and tachypnoeic but remained normotensive. A POCUS revealed a cardiac mass over the left atrium with a large pericardial effusion in tamponade. Following the finding, an ultrasound guided pericardiocentesis was done successfully improving the patient's symptoms and clinical hemodynamic.

Discussion: The classical teaching of Beck's triad is not applicable to all patients with cardiac tamponade. (1) Low-pressure cardiac tamponade is a lesser-known phenomenon that occurs because of slow accumulation of fluid in the pericardial sac likely due to malignant growth as seen in our patient (3). POCUS revealing a pericardial effusion with right ventricular collapse during diastole led to a correct diagnosis of low-pressure cardiac tamponade despite the patient being normotensive (2). Early identification of the problem permitted a live saving pericardiocentesis performed safely under ultrasound guidance.

Conclusion: POCUS has undeniably played a crucial role in saving the life of our patient. More doctors should be trained in POCUS and exclusive findings as seen in our patient must be shared for learning purposes and better delivery of emergency care.

Referrences:

1. Alerhand S, Adrian RJ, Long B, Avila J. Pericardial tamponade: A comprehensive emergency medicine and echocardiography review. *Am J Emerg Med*. 2022;58:159-174. doi:10.1016/j.ajem.2022.05.001

2. Mandavia DP, Hoffner RJ, Mahaney K, Henderson SO. Bedside echocardiography emergency physicians. *Ann Emerg Med*.2001;38(4):377-382.doi:10.1067/mem.2001.118224

3. Spodick DH. Acute cardiac tamponade. *N Engl J Med*. 2003;349(7):684-690. doi:10.1056/NEJMra022643

014

HIDING IN PLAIN SIGHT: PERFORATED VISCUS IN A DENGUE FEVER

Liyana Hassan, Siti Solehah Kamaruzaman, Nur Syuhadah Zainol Abidin

Corresponding author email: liyana.hassan90@gmail.com

Introduction: Abdominal pain is a common presenting complaint for patients with dengue fever and perforated viscus. In this report, we discuss a case of decompensated dengue shock with abdominal pain as a warning sign masking the diagnosis of perforated viscus.

Case Presentation: A 74-year-old gentleman with underlying hypertension presented with abdominal pain and fever for 3 days. He underwent colonoscopy a day prior. On examination, he was dehydrated and hemodynamically unstable. The abdomen was tender, guarded with sluggish bowel sounds. FBC showed bicytopenia and positive Dengue IgM. CXR revealed air under diaphragm. He was diagnosed as decompensated dengue shock with concomitant perforated viscus. The hypotension was refractory to fluid bolus of total 30mls/kg, hence blood transfusion was started with concurrent single vasopressor. He was co-managed by the emergency, intensive care unit (ICU), medical and surgical teams respectively. Intra-operative findings revealed perforated sigmoid colon. He was admitted to ICU for further stabilization and recovered well.

Discussion: Abdominal pain is a common presenting complaint in both dengue fever and perforated viscus. In this case, the acute abdomen could potentially be missed without a thorough clinical examination supported by radiological findings. The risk of perforated colon following a colonoscopy is <0.085% (1). Meanwhile, the incidence of perforated viscous in a dengue fever is extremely rare (2). Hence, for these conditions to co-exist in a patient is even more infrequent. Early recognition of the two life threatening conditions leads to optimum resuscitation, followed by definitive management and recovery. Great teamwork and multidisciplinary approach improve patient's outcome and prevents mortality.

Conclusion: Although dengue fever is an endemic, it is crucial to consider other life-threatening differential diagnosis such as perforated viscus. Early multidisciplinary intervention improves patient's prognosis.

015

WINTER IN MY HEART!! A CASE REPORT OF OCCLUSION MYOCARDIAL INFARCTION (OMI), AN ACUTE CORONARY OCCLUSION WITHOUT ST-ELEVATION

Eric Wong Pek Ying, Mohd Hilmi Che Aun Emergency and Trauma Department, Hospital Alor Gajah, Melaka

Corresponding author email: eric93wong@yahoo.com

Introduction: Myocardial infarction(MI) has always been classified into ST-elevation myocardial infarction(STEMI) or non-STEMI(NSTEMI) with ST-elevation (STE) on ECG as the indication of acute coronary occlusion(ACO) requiring immediate reperfusion. This approach misses about one-third of ACO(1)thus the need for modification of the system to a more superior one based on actual coronary occlusion(2).

Case presentation: 43-year-old man presented with left-sided chest pain, diaphoresis and difficulty breathing. First ECG revealed de Winter sign on lead V2 to V5(Figure 1).Second ECG showed additional changes of ST-depression on inferior leads(Figure 2). Both ECGs did not have STE. He was diagnosed with anterior OMI and streptokinase infusion given. ECG post streptokinase showed resolution of both the aforementioned changes(Figure 3). Echo showed mildly impaired contractility with hypokinesia of mid-anterolateral wall.

Figure 1

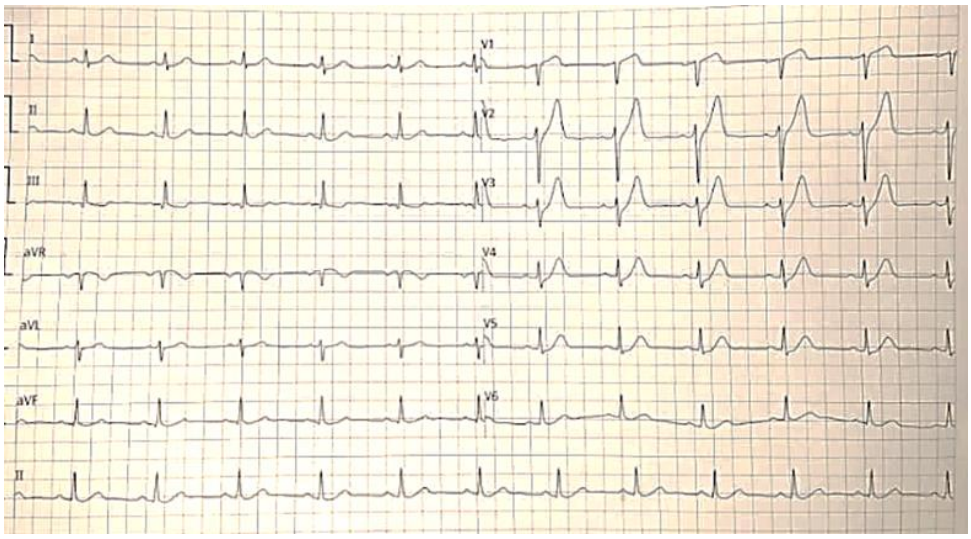


Figure 2

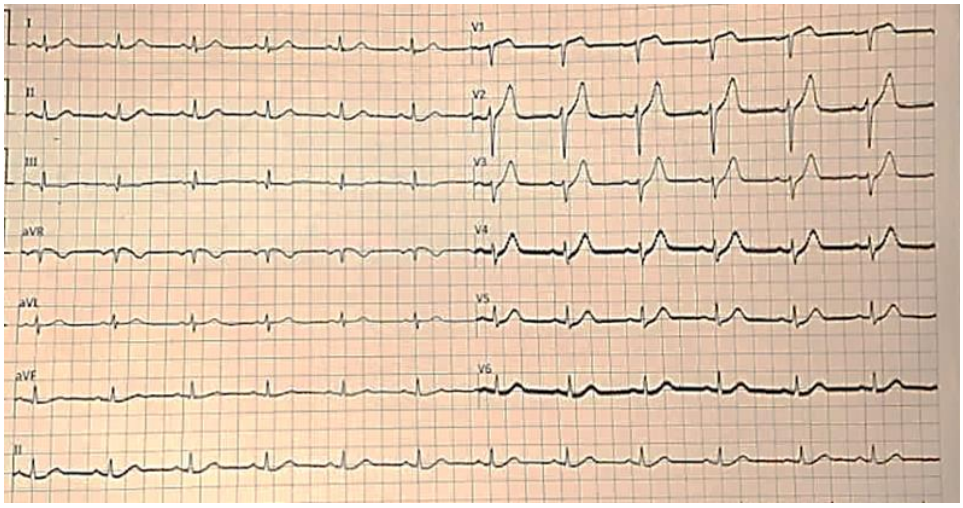
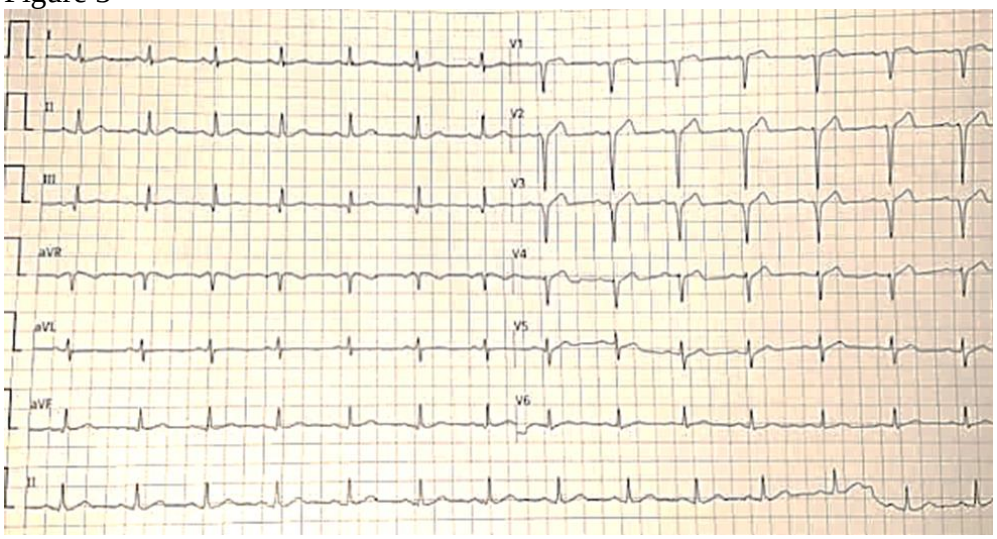


Figure 3



Discussion: Under the current STEMI/NSTEMI system, many patients with ACO are falsely labelled as NSTEMI thus become undertreated (1). A replacement paradigm of Occlusion MI(OMI)/Non-occlusion MI(NOMI) is proposed with OMI defined as acute coronary vessels occlusion, such that the downstream myocardium will undergo inevitable necrosis without emergency reperfusion (3). OMI criteria should include all events of acute coronary blockage that necessitates emergency revascularisation, regardless of STE. It involves a holistic ECG approach, clinical history and investigations, cardiac troponin level, coronary angiography vessel stenosis and perfusion (3). Figure 4 is a flowchart demonstrating the steps to identify OMI ECG criteria (4). A retrospective case-control study found that OMI ECG criteria is more superior than STEMI criteria in which patients involved in the study showed nearly two-fold increase of sensitivity in detecting ACO when using OMI ECG criteria (3).

If with obvious ST-elevation	
Step 1-Exclude artifacts	• Electromechanical association artifacts • Atrial activity • Filtering issues
Step 2- Exclude ST elevation due to depolarisation abnormalities	• Hyperkalaemia • LBBB and RBBB • VPR • WPW
Step 3- Exclude other causes of secondary ST elevation	• Persistent ST elevation post MI • LVH
Step 4- Exclude other causes of primary ST elevation	• Early repolarisation • Pericarditis
Step 5- Presence of ST elevation but with negative T waves	• Wellen's pattern • Subacute MI

If without obvious ST-elevation	
Step 6-Recognition of specific patterns of ST elevation only in 1 lead	• South African Flag Pattern • Aslanger's pattern
Step 7-Close inspection of ECG to look for subtle ST elevation	• Minimal reciprocal changes
Step 8- If absolutely no visualisation of ST elevation, look for ST depression	• De Winter's sign • Posterior MI
Step 9-Look for hyperacute T waves	• Bulky T waves
Step 10-Recheck everything	• Serial ECGs • Serial high sensitive Trop I • ECG quality • Echo, CCTA, CAG

Adapted from Reference 4

CAG: conventional coronary angiogram, CCTA: coronary computed tomography angiogram, LBBB: left bundle branch block, LVH: left ventricular hypertrophy, MI: myocardial infarction, RBBB: right bundle branch block, VPR: ventricular paced rhythm, WPW: Wolff-Parkinson-White syndrome

Conclusion: Absence of STE does not always exclude ACO. A comprehensive system of ECG and clinical picture interpretation is crucial for a favourable outcome.

References

1. Aslanger EK, Yıldırımtürk Ö, Şimşek B, Bozbeyoğlu E, Şimşek MA, Yücel Karabay C, et al. DIagnostic accuracy oF electrocardiogram for acute coronary OCClUsion resuLTing in myocardial infarction (DIFOCCULT Study) *Int J Cardiol Heart Vasc.* 2020;30:100603

2. Meyers HP, Bracey A, Lee D, Lichtenheld A, Li WJ, Singer DD, et al. Comparison of the ST. Elevation Myocardial Infarction (STEMI) vs. NSTEMI and Occlusion MI (OMI) vs. NOMI Paradigms of Acute MI. *J Emerg Med.* 2021;60:273–84.

3. Pendell Meyers H, Bracey A, Lee D, Lichtenheld A, Li WJ, Singer DD, et al. Accuracy of OMI ECG findings versus STEMI criteria for diagnosis of acute coronary occlusion myocardial infarction. *Int J Cardiol Heart Vasc.* 2021;33:100767

4. Emre K. Aslanger, H. Pendell Meyers, Stephen W. Smith. Recognizing electrocardiographically subtle occlusion myocardial infarction and differentiating it from mimics: Ten steps to or away from cath lab. Turk Kardiyol Dern Ars. 2021; 49(6): 488-500

016

BEYOND THE NORM: A PECULIAR PRESENTATION OF DENGEU FEVER WITH BLEEDING HAEMORHHOIDS

Lim Wei Tzein, Shahrizan Majid Allapitchai[1], Thayaharan Subramaniam[1]

[1] Emergency Department, Selayang Hospital

Corresponding author email: wentzien221@gmail..com

A 28 years old foreigner with language barrier, presented with fresh per rectal bleed, fever and abdominal pain for past 4 days. Upon arrival in ED, he was alert but lethargic looking with a BP 91/56, HR 55, SPO2 99% under room air, T 36.9 C. Physical examination revealed right pleural effusion and abdominal signs of leakage. POCUS shows free fluid over Morison pouch, rectovesical pouch and right pleural effusion with bilateral lungs fields B lines, kissing IVC. Per rectal and proctoscope examination revealed bleeding internal haemorrhoids. Blood investigation shows platelet 10, WBC 5, HCT 50, Hb 15 and dengue serology of IgM and IgG positive. Patient was treated as severe dengue fever, day 4 of illness in critical phase with warning signs, leaking, bleeding and shock. He was started on 5% albumin solution and referred to medical, surgical and intensive care unit. Surgical team performed an immediate bedside banding to stop his bleeding, subsequently transferred to ICU for further management.

Dengue is a common tropical infection with high morbidity and mortality rates in third world countries. This case is an atypical clinical presentation of dengue which presents with bleeding haemorrhoids. This case highlights the importance of thorough physical examination and multidisplinary approach to manage complicated cases. The case was co-managed by ED, medical, surgical and the ICU team. First degree internal hemorrhoids usually can be managed conservatively, however due to impending shock and bleeding tendency, the surgical team decided to band and arrest the bleed early. The procedure was also done under platelet cover to prevent rebleed. Management in such case need to be precise as any surgical management carries high morbidity.

017

UNVEILING THE SILENT THREAT: DISCOVERY OF AORTIC DISSECTION IN A STROKE PATIENT THROUGH POCUS

Muhammad Faidhi Rozman, Nurul Nadiah Ahmad Shahruddin, Azlizawati Azil
Emergency and Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia

Corresponding author email: faidhirozman@gmail.com

Introduction: Aortic Dissection (AD) is a threatening condition that requires prompt diagnosis and management as it associated with high mortality. While uncommon, AD may present as acute ischemic stroke and may subject the patient to the lethal complication of fibrinolytic therapy. This case report shows the importance of Point of Care Ultrasonography (PoCUS) to diagnose cause of ischemic stroke.

Case description: A 62-year-old man with underlying hypertension presented with sudden onset of left-sided body weakness, episode of syncope and fluctuating conscious level. On arrival his hemodynamic were stable. Cardiovascular and respiratory examination were normal. He was aphasic and had complete left hemiparesis. Stroke protocol was activated and he was sent for non-contrasted Computed Tomography (CT) brain.CT brain showed multiple focal infract. Upon returning from the CT suite, patient developed hypotension. Bedside PoCUS was performed to look the cause of hypotension which revealed dilated left ventricle outlet tract and intimal flap at the right common carotid artery (CCA). CT angiography confirmed AD with an intimal flap extending into the right CCA. Vascular surgery team was consulted, however family member opted for conservative due to poor outcome. Patient died two days later.

Discussion: AD is an uncommon cause of ischemic stroke and the lack of classical symptoms like severe chest or back pain poses a great challenge in diagnosing AD. In our patient, PoCUS was only performed as part of hypotension assessment. Ultrasound signs of AD include a dilated aorta, intraluminal flap, presence of true/false lumen, pericardial effusion and aortic regurgitation. This case illustrates how focused transthoracic echocardiography extending to common arteries can aid in diagnosing the underlying cause of ischemic stroke, and prevent inappropriate treatments.

Conclusion:

Maintaining a high index of suspicion with PoCUS enhances the detection of AD in presentations resembling stroke.

018

EMERGENCY CRITICAL CARE AT THE INCIDENT SITE: IS IT WORTH?

Khalimah Jahiri[1,2], Fadzillah Ibrahim[1,2], Rashdan Rahmat[1].
[1.] *Emergency and Trauma Department, Hospital Sultan Ismail, Johor Bahru, Johor.*
[2.] *Department of Emergency Medicine, Hospital Universiti Sains Malaysia, Kubang Kerian, Kelantan.*

Corresponding author email: khalimahjahiri@gmail.com

Introduction: Providing early emergency critical care (ECC) at the incident site can improve the survival of the victims. The emergency physician (EP)-led prehospital critical care team (PHCCT) managing the medical needs of the survivors will enhance the response during any mass casualty incident (MCI) or disaster. We look back into the shocking chemical incident in Pasir Gudang, Johor, and the impact of ECC in this case report.

Case report: In March 2019, 5,039 victims were affected by the Sungai Kim Kim chemical incident, which lasted for two weeks, of which 1,165 victims were treated in Hospital Sultan Ismail(HSI). The HSI MCI team led by the EP was immediately deployed to the incident site on the first day. During this stressful period, other EPs were involved at the staging areas (community center and indoor stadium). 432 patients were admitted with 13 intubated cases, and 46% were tagged red and yellow. Fortunately, there was no mortality encountered.

Discussion: The Sungai Kim Kim incident taught us the importance of PHCCT in disaster management. It can increase the survival rate and improve the outcome based on these factors:

1. The MCI team instead of the standard PHC team concept, with EP-led PHCCT who is trained in disaster management, resuscitation, and urgent care;
2. Being the OMC, with well-assigned roles of team members, they can provide early ECC to the victims, hence improving their survival and outcome;
3. Team-based care is looking at a multidisciplinary approach with specialists from various relevant disciplines to provide ECC to the disaster victims and
4. Advancement of medical technology is beneficial in disaster response with the availability of convenient vital signs monitoring, portable ventilators, and portable ultrasound to be used at the medical base station (MBS).

Conclusion: The PHCCT approach in disaster response to provide early ECC is strongly believed to improve the survival and outcome of disaster victims.

Table/ Figures;

Date	No. of patients	ZONES			Admitted	Discharged	Intubated
		Red	Yellow	Green			
7.3.2019	36	14	22	0	34	2	4
8.3.2019	29	2	17	10	13	16	0
9.3.2019	15	0	8	7	7	8	0
10.3.2019	17	1	1	15	4	13	0
11.3.2019	97	3	35	59	48	49	4
12.3.2019	132	11	71	50	65	67	3
13.2.2019	185	21	65	99	99	86	2
14.3.2019	194	5	48	141	57	137	0
15.3.2019	179	11	60	108	42	137	0
16.3.2019	110	1	57	52	31	79	0
17.3.2019	81	1	41	39	19	62	0
18.3.2019	44	0	20	24	10	34	0
19.3.2019	30	1	16	13	3	27	0
20.3.2019	16	0	3	13	0	16	0
TOTAL	**1165**	**71**	**464**	**630**	**432**	**733**	**13**

Table 1: Number of patients receiving treatment at Hospital Sultan Ismail in Ops Kim Kim 2019.

Zones	Red	Yellow	Green	Total
No. of Patients	71	464	630	**1165**
Percentage	6.1	39.8%	54.1%	**100%**

Table 2: Percentage distribution of patients according to zones.

References:

1. Maddock A, et al. Emergency Med J. 2020;37:141-145.
2. Kristof M, Emergency Med. Vol. 13, Iss. 02,2023. No 1000290.

019

INFERIOR VENA CAVA THROMBOSIS IN TRANSIT WITH PULMONARY EMBOLISM

Kok Yong Leng, Balarajan A/L Nagaraja
Corresponding author email: leokyl@hotmail.com

Introduction: Pulmonary embolism (PE) is a life-threatening emergency that requires
immediate intervention and commonly encountered in the emergency department with the incidence rate of 1 per 1,000 patients. However, inferior vena cava (IVC) thrombosis is rarely considered as one of the causes for PE due to a low level of suspicion, and commonly thought to arise from a lower extremity deep venous thrombosis (DVT). IVC thrombosis with PE has a higher mortality as compared to lower extremity DVT because of its significant association with malignancy.

Case description: We herein present a case of 39-year-old man who came to our emergency department with sudden onset of shortness of breath. Point-of-care ultrasound (POCUS) was used to evaluate the patient's haemodynamic status, and resulted in the diagnosis of IVC thrombosis and PE, with a suspicious hyper-echoic well-defined mass in the right lobe of liver. Subsequent computed tomography pulmonary angiography (CTPA) confirmed the diagnosis of concurrent bilateral PE. An ultrasound hepatobiliary system (HBS) revealed a hyper-echoic solid mass seen at segment V and VIII of the liver, possible liver malignancy.

Discussion: Multi-organ POCUS approach not only can increase the likelihood in diagnosing a PE, yet able to determine its underlying pathology, without any delay in treatment. Detection of IVC thrombosis is a window to the diagnosis of malignancy or vice versa. Anticoagulant therapy remains the cornerstone of treatment for both PE and IVC thrombosis.

Conclusion: This case highlights the presence of IVC thrombus in transit with PE is a rare event and immediate treatment is warranted once the diagnosis is confirmed with the aid of the POCUS.

References:

1. Alonso Valle H, et al. Nonsuspected pulmonary embolism in the emergency department. Eur J Emerg Med. 2020;27(5):379–80.
2. Stein PD, et al. Incidence of vena cava thrombosis in the United States. Am J Cardiol 2008; 102: 927–929.

020

A REVIEW OF EMERGENCY MEDICINE PERFORMED BRONCHOSCOPY: A SINGLE CENTRE EXPERIENCE IN A TERTIARY CARE HOSPITAL

Khirthika R Ramasamy[1], Gurjeet Singh a/l HarvendharSingh[1], Theysinthia Thivya Naidu a/p Rajendran Naidu, Thayaharan Subramaniam, Suhash Damodaran, Nabil Muhammad bin Haji Al Kuddoos**,**
Hospital Selayang.
Corresponding author email: khirthikaram@gmail.com

INTRODUCTION: Emergency bronchoscopy is relatively new and not a routine procedure in ED. The objective is to attain airway assessment, adequate oxygenation, and ventilation, by performing bronchoscopy in mechanically ventilated patients.

METHOD: Emergency physicians who have been trained and certified in emergency bronchoscopy, performed bronchoscopy in the critically ill patients through a one-year period in 2023. Data was collected for all the cases who had emergency bronchoscopy performed via a standardized data collection sheet to minimize bias. The data from all the cases was then analyzed in each of its components which includes safety profiles and rate of complications, outcome of patient post bronchoscopy, most common findings recorded in emergency bronchoscopy, medications commonly used and the indications to perform a bronchoscopy.

RESULTS: In the total of 15 patients, who underwent the procedure in our setting, no complications were observed. Three types of methods were used to measure the outcome of our patients, 72% (10) had direct visualization from bronchoscopy ,21% (4) had CXR and 7% (1) had ABG, to analyze the outcome. The best way to evaluate the outcome is by direct bronchoscopy. The most common findings were mucous plugs/secretions 87 % (13) which can be easily treated in ED by removing the plug, suctioning or by bronchial washing. In the 15 patients only 67% (10) required low doses of rocuronium as pre-procedure medication, which are relatively safe, the remaining 33 % (5) not requiring any, as it is rarely needed. Patient's diagnosis to perform bronchoscopy varies, and can be diagnostic and therapeutic. The most common indications are 53% (8) mucus plug clearance, 40% (7) lobar collapse, 7 % (1) as an adjunct for difficult airway.

CONCLUSION: In tertiary care settings, trained and certified emergency physicians can safely and effectively use bronchoscopy to diagnose and treat critically ill patients. Thus, becoming an important therapeutic and diagnostic tool for emergency airway management.

021

RARE CAUSES OF MUSCLE SPASMS AND SEIZURE MIMICS

Ahmad Bilal Ahmad Nasaruddin,Adam Khairudin, Shahanshah Fitri.

Corresponding author email: shahanshahfitri91@gmail.com

Introduction: Tetanus is a neurological disorder characterized by increased muscle tone and spasms, induced by tetanospasmin, a potent protein toxin produced by Clostridium tetani. Despite its rarity, tetanus can manifest with generalized symptoms, including opisthotonos, which may be mistaken for seizures [1].

Case Presentation: A 13-year-old presented to our emergency department (ED) with fever and jerky limb movements persisting for 2 days. He exhibited generalized muscle spasms and abnormal posture, initially suggesting seizure activity. Administering IV Diazepam (2.5mg) yielded no improvement. The discovery of a contaminated left elbow wound redirected the diagnostic focus toward tetanus infection. He received IM tetanus immunoglobulin and antibiotics in our ED but required intubation and mechanical ventilation due to respiratory distress. Subsequent wound debridement was performed. The patient made a full recovery following rehabilitation and physiotherapy.

Discussion: Seizures or involuntary rhythmic muscle spasms are common ED presentations globally, often mimicking various pathologies. This case highlights tetanus as a rare cause of seizure mimics. Notably, tetanus-induced muscular spasms have been misdiagnosed as status epilepticus in previous reports [3].

Conclusion: This case underscores tetanus as a rare yet significant cause of seizure-like symptoms and muscle spasms. Clinicians must maintain a high index of suspicion, as its sporadic nature and unfamiliar presentation pose challenges in early recognition. Vaccination remains pivotal for disease prevention.

Reference

1. Lau, L. G., Kong, K. O., & Chew, P. H. (2001). A ten-year retrospective study of tetanus at a general hospital in Malaysia. Singapore medical journal, 42(8), 346-350

2. Hsu, S. S., & Groleau, G. (2001). Tetanus in the emergency department: a current review. The Journal of emergency medicine, 20(4), 357-365.

3. Lequain, H., Richard-Mornas, A., Argaud, L., & Dargent, A. (2022). Tetanus-induced rhythmic seizures mimicking the clinical and electroencephalographic presentation of status epilepticus. BMJ Case Reports, 15(9), e250645.

022

POINT OF CARE ULTRASOUND (POCUS) AND BILIARY ASCARIASIS

YV Mo[1], MH Fauzi[2], SF Abdull Wahab[3]

[1] *Emergency and Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh, Malaysia*

[2] *Department of Emergency Medicine, School of Medical Sciences, USM, Kubang Kerian, Kelantan, Malaysia*

[3] *Department of Emergency Medicine, School of Medical Sciences, USM, Kubang Kerian, Kelantan, Malaysia*

Corresponding author email: rachel_mo911121@hotmail.com

Introduction: *Ascariasis*, caused by *Ascaris lumbricoides*, stands as one of the most prevalent helminthic infections in humans. This case report delves into biliary ascariasis and underscores the pivotal role of point-of-care ultrasound (POCUS) in facilitating prompt diagnosis in the Emergency Department.

Case description: A 71-year-old woman presented to the Emergency Department with a 2-day history of epigastric pain, fever, and loose stools. She reported passing worms in her stool for a month and had a history of biliary parasitic infestation in 2018. On examination, the patient was afebrile and not jaundiced. Abdominal examination revealed epigastric tenderness. A bedside Point of Care Ultrasound (POCUS) was performed, revealing a dilated common bile duct with the presence of a linear tubular echogenic structure within it. The initial impression was recurrent biliary parasitic infestation. A formal ultrasound was obtained, confirming the diagnosis. Subsequently, the patient underwent ERCP, during which a 25cm-long worm was successfully removed.

Discussion: *Ascariasis* infection is a global helminthic infection prevalent in highly endemic areas, most commonly in tropical and subtropical regions. In the emergency department, Point-of-Care Ultrasound (POCUS) has been identified as the initial imaging tool to diagnose biliary ascariasis. Ultrasound exhibits high sensitivity and specificity in visualizing the worm as well as its movement within the biliary system. While faecal examination for ova is a simple and cost-effective method for diagnosing roundworm infections, POCUS provides distinct advantages and can aid in confirming the diagnosis.

Conclusion: Point-of-Care Ultrasound (POCUS) stands out as a valuable, easily accessible, and non-invasive imaging tool for diagnosing biliary ascariasis, particularly in resource-limited settings.

Keywords: ascariasis, ultrasound, biliary ascariasis, ercp

023

'TRANSIENT ISCHEMIC ATTCK OF THE SPINAL CORD': A CASE REPORT OF TRANSIENT PARAPLEGIA IN ACUTE ABDOMINAL AORTIC DISSECTION

Razinatun Yasin[1], Norhayati Rasip[1], Aaina Iryani Mubarak[1]

1. Emergency and Trauma Department, Hospital Tuanku Ja'afar, Seremban, Negeri Sembilan, Malaysia

Corresponding author email: razinatun@gmail.com

Introduction: Acute aortic dissection is due to the separation of the intimal and medial layers of the aorta which creating a false lumen and causing the progression of the dissection as blood traverses both the true and false lumen [2]. Rarely 1.9% patients can present with isolated symptoms of paraplegia as the chief complaint of acute aortic dissection [2]. We present a case of patient presented with transient paralysis of the bilateral lower limb following an acute aortic dissection.

Case: A 63 years old male with underlying ischemic heart disease and hypertension, presented to ED complained of back pain for 2 days associated with sudden onset of bilateral lower limb weakness which lasted for 1 hour. Upon arrival, his vital signs were stable and symptoms had completely resolved. Neurological examination was unremarkable with no spinal tenderness. Clinically right dorsalis pedis artery were not palpable. Bedside ultrasound showed dilated ascending aorta and presence of intimal flap in the abdominal aorta. CTA of aorta showed aortic dissection DeBakey II with underlying chronic aortic dissection (DeBakey I). Intravenous infusion labetalol was started and urgent cardiothoracic (CTC) referral was made. He was subsequently transferred to CTC Serdang, discharge well and continue follow-up under CTC.

Discussion: Pathophysiology of paraplegia as the initial presentation of AD was likely the result of anterior spinal cord artery syndrome[2]. The dissection can either cause the direct compression or dissection of branch vessels that supply the anterior spinal artery resulting in spinal cord ischemia and lower limb malperfusion (LLM) [3]. The goal of treatment is to restore perfusion the lower limb with medical, open surgical or endovascular approach [1].

Conclusion: The diagnosis of AD can be challenging due to its varying presentation related to malperfusion syndrome. Therefore, a high index of suspicion is required to establish the diagnosis of AD especially in patient presented with neurovascular manifestation.

References:

1. Gargiulo, Mauro, et al. Annals of Cardiothoracic Surgery 3.4 (2014): 351.
2. Hughes, Kate E., et al. The Journal of Emergency Medicine 51.4 (2016): 450-453.
3. Joo, J. B., and A. J. Cummings. The Journal of emergency medicine 19.4 (2000): 333-337.

024

DOUBLE SEQUENTIAL EXTERNAL DEFIBRILLATION FOR AN ELECTRICAL STORM

S.S. Kamaruzaman[1], L. Hassan[1], S.G. Ng[1]

[1]*Emergency and Trauma Department, Hospital Kajang, Selangor*

Corresponding author email: liyana.hassannn90@gmail.com

Introduction: Electrical storm aka refractory ventricular fibrillation (RVF) is defined as persistent or recurrent ventricular fibrillation (VF) after 3 cycles of defibrillation. RVF occurs in almost half of the patients following cardiac arrest and have a mortality rate up to 97%[1]. What's even more infuriating is, it is extremely difficult to manage. Double sequential external defibrillation (DSED) has been proposed as one of the strategy options to manage RVF[2]. Herein, we share a case of RVF during cardiac arrest and was successfully reverted with DSED.

Case Presentation: A 25 years old gentleman with large body habitat presented to us with chest pain. The initial electrocardiography (ECG) showed elevated ST segment in inferior leads and cardiac arrest with VF occurred. Resuscitation commenced as per standard ACLS care. Although 12 defibrillations of 200J were delivered together with administration of IV Amiodarone and Lignocaine, there was no response. DSED was administered by placing additional pads antero-posteriorly (AP) using another defibrillator with 200J of energy. The 2 defibrillations were delivered simultaneously. The patient returned of spontaneous circulation after DSED was performed 3 times.

Discussion: In patient with RVF, further defibrillation in order to terminate VF and achieve ROSC offer little to no help. DSED is an alternative defibrillation strategy in RVF where 2 defibrillators are used with one pad on the antero-lateral (AL) position and one on the AP position. The defibrillation is performed in either sequential or simultaneous manner. Several studies have demonstrated promising result of DSED on RVF compared to continued standard defibrillations on the AL position[2,3]. There are a few hypotheses on how DSED terminate RVF which was based on threshold theory, vector theory and weight-based therapy [2,3]

Conclusion: Treating clinician should consider DSED as an option when dealing with RVF given the difficulty in reverting it to perfusing rhythm.

References:

1. Spies DM, Kiekenap J, Rupp D, et al. Time to change the times? Time of recurrence of ventricular fibrillation during OHCA. Resuscitation 2020; 157:219-224.

2. Cheskes S, Dorian P, Feldman M, et al. Double sequential external defibrillation for refractory ventricular fibrillation: the DOSE VF pilot randomized controlled trial. Resuscitation 2020; 150:178-184

3. Cheskes S, Verbeek PR, Drennan IR, et al. Defibrillation strategies for refractory ventricular fibrillation. N Engl J Med. 2022;387(21):1947-1956

025

CASE REPORT: I HAVE A ROCKING HEART DURING PREGNANCY

Asza AMS[1], Anas Amri H[1]
[1] *Emergency &Trauma Department, Hospital Sarikei, Sarawak, Malaysia*

Corresponding author email: aszaazia3788@yahoo.co.uk

Introduction: Supraventricular tachycardia (SVT) in pregnancy without organic heart disease is rare and it has been reported with an overall frequency of approximately 12 to 33 out of 100,000 pregnancies. There is no reliable data on the incidence of paroxysmal SVT with pseudo electrical alternans in pregnant women. Here, we are presenting a pregnant woman with SVT and electrical alternans.

Case: 33-year-old woman with gestation age of 27 weeks 6 days presented to casualty with a day history of palpitation and uneasiness over the chest. She has underlying childhood asthma but denied any structural and functional heart diseases. She was hemodynamically stable and electrocardiography (ECG) showed narrow QRS complex tachycardia with electrical alternans. Bedside echocardiography was done and excluded pericardial effusion and any structural heart abnormality. She was treated successfully with intravenous verapamil and adenosine, with ECG showing sinus rhythm post pharmacological cardioversion.

Discussion: Pregnancy and its physiological changes increase the susceptibility of pregnant women to arrhythmias, especially during the third trimester and post-partum period. There is no precise data explaining the mechanism of pseudo-electrical alternans during narrow complex SVT in pregnancy, and it has been postulated that it is attributed to non-specific intraventricular conduction abnormalities or heart motion. The presence of pseudo-electrical alternans during SVT is generally more suggestive of atrioventricular re-entrant tachycardia (AVRT) than other forms. The approach to pregnant women presenting with SVT and pseudo-electrical alternans is similar to that of non-pregnant women. Physical treatment like Valsalva manoeuvres followed by drug therapy is tried in hemodynamically stable patients. On the other hand, electrical cardioversion or invasive method like radiofrequency ablation are justified in haemodynamic compromised mothers with continuous maternal and foetal monitoring. It is crucial to collaborate closely with the cardiologist and obstetrician throughout the pregnancy to develop care strategies for potential recurrences of arrhythmia in patients.

Conclusion: Similar procedures are followed when treating pregnant women with rapid heartbeats as when treating non-pregnant women, beginning with non-invasive techniques for stable patients. In extreme circumstances, more aggressive procedures such as radiofrequency ablation or electrical cardioversion may be required, accompanied by vigilant observation of both the mother and infant.

Reference:

1. Nelson-Piercy, C., 2020. Handbook of obstetric medicine. CRC press:22-23
2. Vaidya, V.R., Arora, S., Patel, N., Badheka, A.O., Patel, N., Agnihotri, K., Billimoria, Z., Turakhia, M.P., Friedman,P.A., Madhavan, M. and Kapa, S., 2017. Burden of arrhythmia in pregnancy. Circulation, 135(6), pp.619-621.
3. Li, J.M., Nguyen, C., Joglar, J.A., Hamdan, M.H. and Page, R.L., 2008. Frequency and outcome of arrhythmias complicating admission during pregnancy: Experience from a high volume and ethnically diverse obstetric service. Clinical Cardiology: An International Indexed and Peer Reviewed Journal for Advances in the Treatment of Cardiovascular Disease, 31(11), pp.538-541.
4. Oktay, C., Kesapli, M. and Altekin, E., 2002. Wide-QRS complex tachycardia during pregnancy: treatment with cardioversion and review. The American journal of emergency medicine, 20(5), pp.492-493.
5. Tan, H.L. and Lie, K.I., 2001. Treatment of tachyarrhythmias during pregnancy and lactation. European heart journal, 22(6), pp.458-464.
6. Laksman, Z.A.C.H.A.R.Y., Harris, L.O.U.I.S.E. and Silversides, C.A.N.D.I.C.E., 2011. Cardiac arrhythmias during pregnancy: a clinical approach. Fetal Matern Med Rev, 22(2), pp.123-43.
7. ROBERTS, J.M., INSEL, P.A. and GOLDFIEN, A., 1981. Regulation of myometrial adrenoreceptors and adrenergic response by sex steroids. Molecular Pharmacology, 20(1), pp.52-58.
8. Omar, H.R. and Camporesi, E.M., 2017. Pseudoelectrical alternans during supraventricular tachycardia. Turkish journal of emergency medicine, 17(1), p.32.
9. LoMauro, A. and Aliverti, A., 2015. Respiratory physiology of pregnancy: physiology masterclass. Breathe, 11(4), pp.297-301.
10. Tromp, C.H.N., Nanne, A.C.M., Pernet, P.J.M., Tukkie, R. and Bolte, A.C., 2011. Electrical cardioversion during pregnancy: safe or not?. Netherlands Heart Journal, 19(3), pp.134-136.
11. Surawicz, B. and Fisch, C., 1992. Cardiac alternans: diverse mechanisms and clinical manifestations. Journal of the American College of Cardiology, 20(2), pp.483-499.

026

PENETRATING NECK INJURY - A DISTRICT HOSPITAL EXPERIENCE

Amirul Adib[1]

[1]*Hospital Sungai Bakap, Pulau Pinang*

Corresponding author email: adibzakhi@rocketmail.com

Introduction: With a staggering 10% mortality rate, handling penetrating neck injuries presents a formidable challenge, even in top-notch trauma centers. Delve into our report, unveiling the intricacies of managing penetrating chest wall injuries in a district hospital setting.

Case: A 16-year-old motorcycle rider was involved in a road traffic accident with a lorry. Post-trauma, he developed breathlessness and sustained an open wound over zone 1 of his neck. Clinical assessment concluded the diagnosis of penetrating neck trauma complicated with right pneumothorax. The prompt intervention included a right chest tube, a three-sided occlusive dressing, oxygen therapy, IV antibiotic, and adequate analgesia. He was then intubated because of impending respiratory collapse. Subsequently, he was transferred to a tertiary trauma center for CT imaging and received comprehensive care through a multidisciplinary approach. After prolonged hospitalization, he underwent an uneventful recovery and was discharged well.

Discussion: A penetrating neck injury occurs when trauma to the neck breaches the platysma muscle. Managing such injuries can be tricky as the neck, an intricate anatomical area, houses vital vascular, aerodigestive, and neurological structures that are comparatively vulnerable. Timely and accurate diagnosis of neck trauma is paramount, significantly impacting mortality and morbidity outcomes. Also, the location of the neck injury dictates the subsequent course of management and underscores the significance of recognizing both hard and soft neck signs.

Conclusion: Every intervention is critical and time-sensitive in a neck injury, as acutely life-threatening as it can get. This case report underscores the challenges in managing penetrating chest trauma in a resource-limited district hospital.

The author also would like to acknowledge the patient for approving the photographs used in this academic writing.

Figure 1: Penetrating Neck Injury in Zone 1

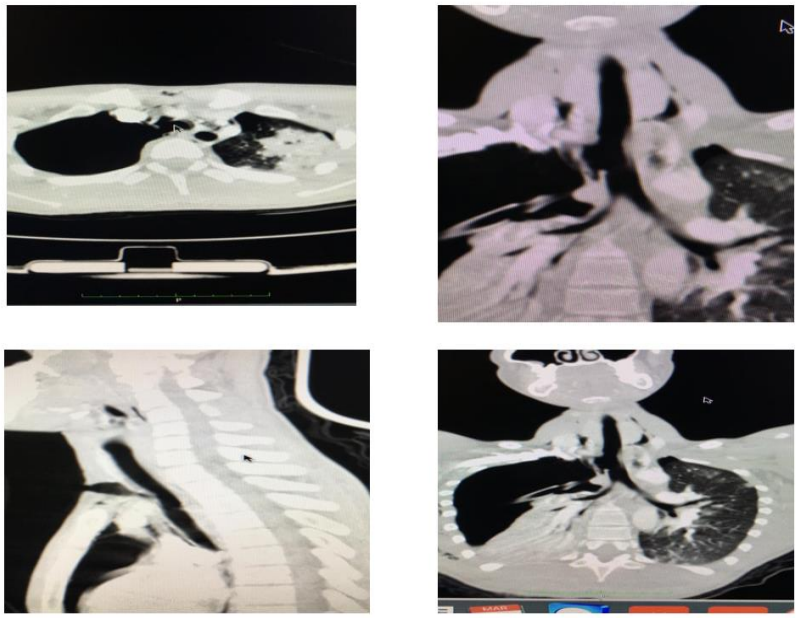


Figure 2: CECT Neck & Thorax of patient

027

EMERGENCY MEDICINE POINT OF CARE ULTRASOUND: A COMPLEMENTARY TOOL IN THORACIC AORTIC ANEURYSM DETECTION

J. Hidzir[1], W.J. Kang[1]

[1]Emergency and Trauma Department, Hospital Shah Alam, Selangor
Corresponding author email: hidirjeff@gmail.com

Introduction: Thoracic aortic aneurysms (TAA) are rare, occurring in approximately 6-10 per 100,000 people. TAA carries high mortality rate within the first 48 hours, making it a time critical emergency. Hence, emergency provider must acquire the skill to perform Point-of-Care Ultrasound (POCUS) for timely intervention. Herein, we share our case.

Case: 60-year-old gentleman with hypertension presented with left upper back pain. His pulse was irregularly irregular with no radio-radial delay. Auscultation of the heart and lungs were normal. Vital signs are stable with pain score of 10. Electrocardiogram showed rate controlled atrial fibrillation. Bedside POCUS revealed a dilated descending thoracic aortic measuring 8.4cm at the parasternal long axis view. Emergent Computed Tomography Angiography (CTA) confirmed a descending thoracic aortic fusiform aneurysm with evidence of impending rupture. Subsequently patient was transferred for thoracic endovascular aortic repair.

Discussion: TAA are less prevalent compared to abdominal aortic aneurysm (AAA). Descending TAA start beyond left subclavian artery which account for about 35% of TAA. TAA has a wide range of clinical presentation ranging from asymptomatic to profound shock. TAA is fatal if failure to rapidly recognize it to initiate timely intervention. Bedside ECHO is a quick and effective tool to evaluate TAA. The parasternal long axis view and the suprasternal view allow visualization and measurement of the thoracic aorta. However, clinicians must recognize the limitation of POCUS - that it cannot visualize the entire extent of the thoracic aorta. Hence, CTA should be obtained if TAA is suspected. Our patient was assessed in this manner, yielding an accurate diagnosis of a descending thoracic aortic fusiform aneurysm accelerating definitive surgical intervention.

Conclusion: POCUS is an indispensable tool for the 21st century ED especially in identifying TAA. A skill to master!

028

THE FATAL SILENT INHERITANCE: COMBINED STRATEGY WITH POINT OF CARE ULTRASOUND IN DETECTING PULMONARY EMBOLISM AND INTERVENTION OUTCOME

J. Hidzir[1], A.A. Lina[1], J. Sarah[1], W.J. Kang[1], R. Sivaganabalan[1]
[1]Emergency and Trauma Department, Hospital Shah Alam, Selangor
Corresponding author email: hidirjeff@gmail.com

Introduction: Pulmonary embolism (PE) is a lethal manifestation of venous thromboembolic disease. In this case series, we present a family presenting to our Emergency Department (ED) 2 weeks apart where PE was detected with Point-of-Care Ultrasound (POCUS) and a possibility of thrombophilic genetic mutations linkage.

Cases:

Case 1
28-year-old lady, postpartum day 18, presented to ED with shortness of breath (SOB) associated with left calf swelling. She was alert, tachypneic and tachycardic, but normotensive. Lungs were clear. Electrocardiogram (ECG) showed sinus tachycardia, S1Q3T3. POCUS showed features of right heart strain suggestive of acute PE. CTPA revealed extensive bilateral PE and she was started on anticoagulant subsequently she was admitted for submissive PE but succumbed from a sudden cardiac arrest.

Case 2
69-year-old woman, mother of case 1, with underlying hypertension presented with SOB for 2 weeks. She denied any other symptoms. Further history, she had been grieving and was treated initially for Takotsubo cardiomyopathy. On examination, lungs were clear. Initial vital signs were blood pressure = 110/60mmHg, pulse rate = 110 beats/minute, respiratory rate = 35 breaths/min, SpO_2 = 70% under room air, temperature = 36.5°C. ECG – sinus tachycardia, S1Q3T3. POCUS showed dilated right ventricular, D- shaped septum with McConnell's sign and a plethoric IVC. She was thrombolysed for massive PE. CTPA confirmed bilateral PE involving both main pulmonary arteries and their segmental branches.

Discussion: Based on 2019 European Society Cardiology Guidelines on acute PE, combination of clinical assessment, D-dimer and CTPA provide the best diagnostic strategy to confirm PE. However, in resource-limited centres, POCUS is a reliable bedside tool to rapidly diagnose PE prior to CTPA. In our case, with clinical assessment and POCUS, it resulted in a confident first-line diagnosis of PE expediting life-saving thrombolysis.

Conclusion: POCUS in ED is an effective tool to rapidly diagnose acute PE and expedite definitive therapy.

029

THE DILEMMA: TO TREAT OR NOT TO TREAT

Akmal Izzati binti Azizan, Balarajan A/L Nagaraja
Corresponding author email: izzatiazizan.08@gmail.com

Introduction: Clinical examination with point of care ultrasound (POCUS) is key in cases with diagnostic dilemma. We present on how POCUS is part of clinical examination in aiding diagnosis of complex case.

Case description: A 58-years-old man with case of asthma and liver hemangioma in the background of cirrhosis and ascites presented with dyspnea after involved in a motor-vehicle accident. Noted generalized rhonchi with poor air entry bilaterally and was given nebulization. His trachea deviated to the left with hyper-resonant percussion on the right. Extended FAST showed absent sliding sign with lung point over the right lung and free fluid at Morisson pouch, splenorenal recess and pelvic region. He deteriorated and persistently hypotensive despite right finger thoracotomy and chest tube insertion. Surgical team proceeded with exploratory laparotomy and intraoperative showed traumatic ruptured hemangioma with 9 liters of hemoperitoneum.

Discussion: Difficult to discern pneumothorax with underlying severe asthma as both have similar symptoms. In this case, pneumothorax was not detected at first but with full clinical examination and POCUS, patient was treated properly. Severe asthma may induce tension pneumothorax due to air trapping and auto PEEP. Trauma may cause the pneumothorax but the persistent air trapping from the ventilator flow-time scalar, suggested chance of asthma induced tension pneumothorax.

Next dilemma was the free fluid, was it blood from intraabdominal injury or ascites from underlying liver cirrhosis? Using POCUS to tell apart ascites from blood is hard. However, because of the increasing amount of free fluid from repeated POCUS, persistent hypotension despite relieve of obstructive shock, clinical worsening of abdominal distension and the high probability of rupture of the underlying liver hemangioma, we initiated massive transfusion protocol and patient was push for emergency laparotomy.

Conclusion: POCUS aid in managing difficult cases if used wisely with good clinical examination and history taking.

030

SCOPE AND SUCTION: REEXPANSION PULMONARY EDEMA (REPE), A COMPLICATION POST-BRONCHOSCOPY TO BE AWARE OF

Nik Ahmad Hatim NMD[1], Abu Yazid MN[1]

[1]Department of Emergency Medicine, Hospital Universiti Sains Malaysia, Kota Bharu, Kelantan, Malaysia

Corresponding author email: drhatimdziauddin@gmail.com

Introduction: Reexpansion pulmonary edema (REPE) is uncommon acute lung injury (ALI) with incidence of less than 1% that may actually occur due to excessive suction of tracheobronchial tree during bronchoscopy but was seldomly mentioned.

Case: A 63-year-old lady with hypertension and stroke presented with 3 days of fever, lethargy and was bedridden for 2 months after a fall. Patient was clinically in shock with temperature of 38.7°C. She had respiratory distress with lung finding of left sided lower zone coarse crepitation and was unable to saturate despite high-flow mask oxygen. She was intubated for impending respiratory collapse and ultrasound showed right femoral vein thrombosis with CT pulmonary angiogram confirmed of pulmonary embolism. Antibiotic and anticoagulant were started for initial treatment. In ICU, patient required bronchoscopy for collapse and consolidation of left lower lobe as evidence by chest x-ray. Thick mucus over left upper and lower lobes were sucked out. Suddenly, patient desaturated to 90% and required greater PEEP to maintain saturation. Repeated chest x-ray suggest unilateral left upper lobe collapse and lower lobe REPE. With adequate PEEP, REPE as well as the collapse and consolidation of left lower lobe were resolved.

Discussion: When pulmonary collapsed, production of surfactant reduced favouring regional tissue hypoxemia. Correction of collapse results in pulmonary reexpansion, rapidly cause reestablishment of regional blood flow and abrupt alveolar reexpansion. Mechanical alveolar injury will compromise alveolar-capillary barrier's integrity. With presence of neutrophils and elevation of inflammatory mediators, these injure capillary walls and increase their permeability. Thus, coupled with increase in hydrostatic and pulmonary capillary pressure, potentially result in devastating ALI.

Conclusion: Therefore, excessive suction of tracheobronchial tree during bronchoscopy may contribute to potential occurrence of REPE, explained by rapid reinflation of the collapsed lung.

031

HOW TO SEE BETTER IN ED?

Theysinthia Thivya Naidu a/p Rajendran Naidu[1], Pak Jun Wee[1]

Corresponding author email: thia.naidu@gmail.com

Introduction: Ocular symptoms account for around 2-3% of emergency department (ED) visits. Evaluating ocular disorders at the ED can be difficult due to several reasons. Ocular point-of-care ultrasound (POCUS) may be a useful adjunct for evaluating ocular conditions.

Case: A 63-year-old gentleman with underlying hypertension and bilateral cataracts presented with three days of sudden painless vision loss of his right eye. Visual acuity was 6/6 and 6/12 on the left and right eye, and he had monocular visual loss on the right field. Bilateral pupils were equal and reactive with normal direct light reflex. On ophthalmoscopy, the right eye's red reflex was lost. Direct visualisation of the patient's eye's internal structures proved difficult.

Discussion: Ocular POCUS revealed a tethered flap that had separated from the eye's posterior wall. It was seen on several axes and moved with eye movement, indicating retinal detachment. An urgent referral to opthalmology was made, and the patient underwent operation the next day.

Acute retinal detachment can be hard to diagnose, and if treatment is delayed, permanent vision loss may follow. A cross sectional multi-centre study showed that while most EP (75%) are confident in their ability to identify ophthalmic emergencies, only 50.6% felt confident with their ophthalmic examination.

A systemic review of eleven studies published in 2019 found that ultrasonography was 94.2% sensitive and 96.3% specific for diagnosing retinal detachment. Ocular POCUS also showed good specificity and negative predictive value in other ophthalmic emergencies i.e., vitreous haemorrhage and vitreous detachment.

A retrospective study done showed that 31 of 34 patients diagnosed with retinal detachment were properly identified as having retinal detachment by the emergency physician (EP) utilising ocular POCUS.

Conclusion: Ocular POCUS can be a quick, accurate, simple, and cost-effective adjunct to evaluate patients with ocular complaints.

032

THROMBOLYSIS IN A SUBMASSIVE PULMONARY EMBOLISM WITH THROMBUS-IN-TRANSIT

A. A Zarawi [1], L. Hassan [1], S.Abd Halim [1]
[1]*Emergency and Trauma Department, Hospital Kajang, Selangor*

Corresponding author email: liyana.hassan90@gmail.com

Introduction: Right heart thrombi in the setting of acute pulmonary embolism are uncommon medical emergency and associated with significant mortality. In this case report, we highlight a case of submassive pulmonary embolism with right ventricular thrombus originating from deep vein that underwent successful thrombolysis.

Case Presentation: A 45-year-old man with no known illness, presented with shortness of breath, cough and right lower limb swelling for a week. Upon assessment, he was borderline hypotensive, tachycardic and in respiratory distress requiring high flow nasal cannula. Lungs had bibasally reduced air entry and his right lower limb was oedematous. Chest radiograph revealed oligemic right upper zone with wedge-shaped consolidation of the right midzone. Compression ultrasonography of right lower limb was positive. Point-of-care-ultrasound showed right ventricle enlargement with free floating thrombus and D-shaped left ventricle. Systemic thrombolysis with Streptokinase was initiated in view of potential circulatory collapse. CT pulmonary angiogram confirmed the diagnosis. His hemodynamics improved after thrombolysis and was discharge with oral anticoagulant.

Discussion: Free floating right heart thrombus could potentially embolize at any moment, thus require emergency treatment. Rapid detection using bedside ultrasound in emergency department can help guide to the diagnosis. Unfortunately, the optimal management of right ventricular thrombi is not well established. In resource limited setting, systemic thrombolysis may accelerate clot dissolution, improve pulmonary perfusion and right ventricular function. Nevertheless, thrombolysis comes with an increased risk of bleeding.

Conclusion: Emergent thrombolysis is a simple, easily available treatment compared to other options such as percutaneous retrieval technique or surgical embolectomy. Despite successful outcome, the optimal treatment for right heart thrombi remains uncertain and warrants additional studies.

033

TRIPLE A: A TICKING BOMB WITH DIAGNOSTIC DILEMMA

Prasaniya Gunasegeran[1], Nur Syuhadah Zainol Abidin[1]

[1]*Emergency & Trauma Department, Hospital Kajang*
Corresponding author email: pisces_niya91@yahoo.com

Introduction: Ruptured abdominal aortic aneurysm (AAA) is a life-threatening surgical emergency associated with poor survival rate and prognosis. It poses a significant diagnostic challenge for clinicians due to its non-specific clinical manifestations mimicking other common causes of abdominal pain such as ureteric colic which can lead to misdiagnosis or delayed diagnosis with lethal outcomes.

Case Report: A 74-year-old gentleman, chronic smoker with underlying hypertension and atrial fibrillation on warfarin presented to ED with acute onset of left loin to groin pain. On examination, he was in pain but hemodynamically stable, his abdomen was soft but tender over left lumbar region. His FBC was normal while his renal profile showed mild AKI. The urinalysis demonstrated microscopic haematuria. He was treated as left ureteric colic, however pain was persistent despite adequate analgesia. He subsequently deteriorated with class 3 haemorrhagic shock requiring blood transfusion. Bedside ultrasound revealed dilated abdominal aorta 7x7cm. CTA abdomen confirmed the diagnosis of ruptured AAA. He was referred to a vascular surgeon for emergency repair, unfortunately he succumbed during the transfer.

Discussion: Majority of patients with AAA are asymptomatic until it ruptures. The classic triad of back/flank pain, pulsatile abdominal mass and hypotension may only be seen in 50% of patients [1]. Timely recognition of this entity can be difficult due to complex signs and symptoms resembling ureteric colic, hence POCUS of aorta becomes a valuable adjunct to detect AAA. With a high mortality rate of 80-90% [2], early identification of ruptured AAA is crucial for optimal resuscitation as well as to expedite vascular referral and transfer for emergent surgery.

Conclusion: Ruptured AAA must be considered in all patients presenting with abdominal pain especially the elderly with multiple comorbidities. In this context, the POCUS of aorta proves to be an effective screening tool for AAA.

References

1. Dark SG et al. J Cardiovasc Surg 14: 484-491,1973
2. Bengtsson H et al. J Vasc Surg 18: 74-80,1993

034

HOW TO MEND A BROKEN HEART: TRAUMATIC BRAIN INURY INDUCED TAKOTSUBO CARDIOMYOPATHY

Puteri Amira Mohd Hassan[1,2], Mohd Zailani Abd Shariff [1,2], Azlizawati Azil[1], Balarajan Nagaraja[1], Jahlelawati Zul[1], Adi Osman[1]

Emergency and Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh, Perak, Malaysia

Department of Emergency Medicine, School of Medical Sciences, USM, Kubang Kerian, Kelantan, Malaysia

Corresponding author email: puteri_amira88@yahoo.com

Introduction: Takotsubo cardiomyopathy (TC), also known as “broken heart syndrome” or “stress cardiomyopathy” is characterized by transient cardiac dysfunction with left ventricular apical ballooning triggered by physiological or physical stress. We present a case of traumatic brain injury (TBI) induced TC.

Case description: A 21-year-old healthy lady presented to the emergency department after high collision motor vehicle accident and sustained left frontal and parietal intraparenchymal hemorrhage and closed bilateral superior pubic rami. CT abdomen and pelvis reported no solid intra-abdominal organ injury. Laboratory evaluation revealed a haemoglobin of 10.7g/L, troponin I 4396.8ng/L and ECG demonstrated T inversion at lead V2 and V3. Despite being adequately resuscitated with fluids and blood products; she required inotropic support to maintain acceptable blood pressure. Transthoracic echocardiography (TTE) was performed and revealed apical ballooning of the left ventricle with low ejection fraction (EF 20%). Subsequently transesophageal echocardiography (TOE) was performed to evaluate the thoracic aorta which was normal. Inotropic support was continued and she was admitted to the Intensive Care Unit.

Discussion: TC has been reported in 10% of traumatic brain injuries[1]. Early inotropic support improves systemic and cerebral perfusion pressures and avoids the deleterious complications of excessive fluids or blood-products transfusion. TTE provides a rapid and noninvasive evaluation of the hemodynamic parameters and cardiac function. TC generally has good outcome and resolution of cardiac function has been seen as fast as few hours to 12 weeks[2]. Unfortunately, our patient despite the recovery of the cardiac function, her neurological function remain poor and needed tracheostomy.

Conclusion: While rarely reported in TBI, TC feasibly detected with TTE and should be considered in such patients with unexplained hypotension.

References:

1. Cinotti, R. *et al.* A longitudinal cohort of stress cardiomyopathy assessed with speckle-tracking echocardiography after moderate to severe traumatic brain injury. *Crit Care* **24**, 216 (2020).
2. Cheah, C. F. *et al.* Takotsubo Cardiomyopathy in Traumatic Brain Injury. *Neurocrit Care* **26**, 284–291 (2017).
3. Wang, F. & Darby, J. Case Report: Takotsubo Cardiomyopathy After Traumatic Brain Injury. *Front Neurol* **12**, (2021).
4. Fernandez, C. A. *et al.* Takotsubo Cardiomyopathy and Trauma: The Role of Injuries as Physical Stressors. *Cureus* (2022)
5. Contreras Gutiérrez, V. H. Takotsubo cardiomyopathy: A case-report. *Revista Médica del Hospital General de México* **81**, 41–46 (2018).
6. Girón-Arango, L. & D'Empaire, P. P. Is There a Role for Transesophageal Echocardiography in the Perioperative Trauma Patient? *Curr Anesthesiol Rep* **12**, 210–216 (2022).

035

POINT OF CARE ULTRASOUND DETECTION OF RETINAL DETACHMENT IN A YOUNG PATIENT

Iqlima Idris, Mohamad Masykurin Mafauzy

Corresponding author email: iq5_idris@yahoo.com

Introduction: Ophthalmologic complaints are commonly seen in the emergency department (ED) and compose approximately 2% to 3% of all ED visits.[1] Retinal detachment is one of the ophthalmologic emergencies and will cause permanent vision loss if untreated.[2] Point-of-care ultrasound has been suggested to identify the diagnosis rapidly when the ocular examination is limited.

Case Report: A 29-year-old gentleman with no comorbid presented with reduced vision in the bilateral eye for the past one month. He reported the symptoms have been gradually worsening in the right eye as he could see lights only. Physical examination revealed elevated blood pressure with perception of light only in the right eye. His capillary sugar was raised 20mmol/L. Orbital point-of-care ultrasound was performed and showed a hyperechoic line raised off the posterior segment of the eye.

Ophthalmology was consulted, and a diagnosis of traction retinal detachment with vitreous haemorrhage was made. The patient was admitted to the ward for further evaluation.

Discussion: Orbital POCUS suits the ED setting because of its portability, lack of radiation exposure, and time efficiency. A retrospective study by Jacobsen B et al. in 2016 showed that out of the 34 patients diagnosed with retinal detachment by ophthalmologists, 31 were correctly identified as having retinal detachment by the emergency physician using orbital POCUS.[3]

Another systemic review and meta-analysis by Gottlieb et al. showed ultrasound was 94.2% sensitive and 96.3% specific for the diagnosis of retinal detachment.

Conclusion: As the history and physical examination may not be sufficient to diagnose retinal detachment formally, the use of orbital POCUS may help to detect the disease rapidly. POCUS serves as an excellent adjunct to help evaluate patients with ocular symptoms in the ED when an ophthalmologist is unavailable. Ultimately, using orbital ultrasound to detect retinal detachment has essential implications in the ED patient course.

References

1. Walker RA, Adhikari S. Eye emergencies. In: Tintinalli JE, Stapczynski S, Ma OJ, Yealy DM, Meckler JD, Cline DM,eds. *Tintinalli's Emergency Medicine: A Comprehensive Study Guide*. Chicago, IL: McGraw-Hill Medical; 2011:236:1517-1549.
2. Gottlieb, M., Holladay, D., & Peksa, G. D. (2019). Point-of-Care Ocular Ultrasound for the Diagnosis of Retinal Detachment: A Systematic Review and Meta-Analysis. *Academic emergency medicine: official journal of the Society for Academic Emergency Medicine*, *26*(8), 931–939. https://doi.org/10.1111/acem.13682
3. Lahham S, Shniter I, Thompson M, et al. Point-of-Care Ultrasonography in the Diagnosis of Retinal Detachment, Vitreous Hemorrhage, and Vitreous Detachment in the Emergency Department. *JAMA Netw Open.* 2019;2(4):e192162. Gottlieb, M., Holladay, D., & Peksa, G. D. (2019).
4. Jacobsen B, Lahham S, Lahham S, Patel A, Spann S, Fox JC. Retrospective review of ocular point-of-care ultrasound for detection of retinal detachment.West J Emerg Med. 2016;17(2):196-200. doi:10.5811/westjem.2015.12.28711

036

FROM MISHAP TO MARVEL: A COMPELLING CASE OF METAL WIRE PENETRATION INTO THE CHEST WALL

Ivan Tan Tek Ming[1], Homaladevi A/P Jeryaraman[1], Phylicia Lim Yi-Tynn[1], Balarajan A/L Nagaraja[1]

[1]Emergency & Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh

Corresponding author email: ivantan92@gmail.com

Introduction: Cases of metal wire penetration has been reported throughout the world. While the penetration itself causes discomfort, what is concerning is the immediate complications, namely pneumothorax, hemothorax, pericardial tamponade, injury to great vessels. POCUS has been proven to accurately exclude life-threatening complications and aids surgeons in decision making.

Case: A 23 years old lawn maintenance worker presented to the ED with a sharp stabbing pain over his left chest wall. A 15 cm long rusted metal wire was sent flying into his chest when his colleague's lawn mover machine grazes through it. Upon presentation, his vitals were stable. Primary survey revealed no abnormality. An approximately 1 cm metal wire stick was jotting out from his chest wall at the parasternal left 4th intercostal space. Lateral view of CXR noted the wire was 27 mm from the outer chest wall. POCUS noted bilateral sliding sign present indicating absence of pneumothorax. We were able to visualize the metal wire location and depth via POCUS, which aided in its removal under local anaesthesia by surgical team. Patient was safely discharged after 8 hours in ED.

Discussion: This case illustrates the prompt diagnosis of exclusion of a penetrating chest wall injury with POCUS. Foreign body in the chest wall have been rarely reported, and there is no clear guideline in its management. Treatment modalities (surgical vs non-surgical) depend on the size, type, and location of the foreign body. If the foreign body enters the circulation (systemic or pulmonary), it can lead to myocardial infarction and pulmonary embolism respectively. When in doubt, a CT scan is recommended.

Conclusion: It is evident that bedside POCUS plays a vital role in enhancing the management of penetrating chest wall patient. By incorporating bedside POCUS, healthcare providers can improve patient outcome by making timely and accurate diagnosis, facilitating appropriate interventions, and ultimately saving lives.

Figure 1 and Figure 2: Metal wire is seen over the left chest wall

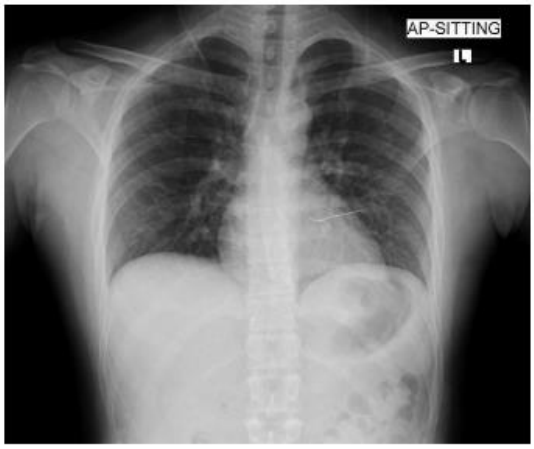


Figure 3: Chest X-ray (AP) illustrating metal wire on the left chest

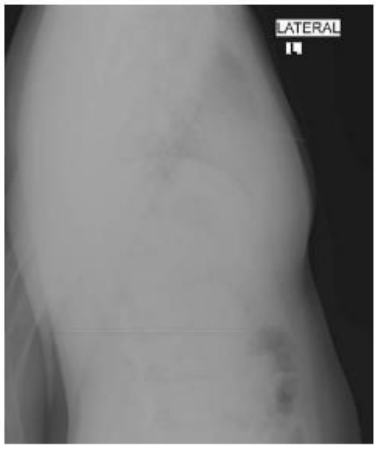


Figure 4: Chest X-ray (Lateral) illustrating metal wire depth

Figure 5: Ultrasound image (linear probe) showing metal wire (yellow arrow) and the intact pleura (red arrow)

Figure 6: The removed metal wire

037

POINT-OF-CARE ULTRASOUND IN DIAGNOSING AORTIC DISSECTION

Mohammad Zairul Anwar Bin Zailani, Azliza Binti Abd Rahman, Mohd Anas bin Mohd Nor, Nur Elyatulnadia Binti Suhaizad.

Corresponding author email: zairulanwar93@gmail.com

INTRODUCTION: Aortic Dissection(AD) is uncommon but frequently fatal. The incidence of AD shows ranging from 2.9 to 4.7 cases per 100,000 people annually.Aging is one of the risk factors.

CASE: A 43-year-old previously well gentleman presented with central and epigastric pain for 1 day with a pain score of 9. On examination, he was alert despite his vitals persistently borderline hypotensive and bradycardic. He had radio-radial and radio-femoral delay.On Point of Care Ultrasound (POCUS) suprasternal echo view, he had dilated aortic root with visible flap from aortic root to ascending aorta.Then, the patient was transferred to the tertiary centre for CTA Thorax which confirmed the presence of AD Stanford A.He was later sent to Serdang Hospital for operative management.

DISCUSSION: In this case, POCUS played a crucial role especially in district hospitals in making a solid diagnosis and guided relevant management. This is because mortality increases 1-2% per hour in first 24H. A study demonstrated that sensitivity of diagnosing Type A Stanford AD counted up to 88% with emergency physicians equipped with POCUS. The sensitivities improved to 96% with addition of Aortic Dissection Detection risk score (ADD-RS).However, the main limitation to the use of POCUS is the dependence on the operator experience. In addition, image quality may be poor because of patient body habitus, pulmonary disease, or chest wall abnormalities. Hence, one study looked specifically for dilation of at least one segment of aorta or an abnormal typical linear intraluminal echo corresponding to the intimal flap. The findings to be 100% specific and 67% sensitive for AD.

CONCLUSION: Diagnosing AD presents a unique challenge for all emergency providers. Its high mortality rate warrants prompt diagnosis and treatment. The application of POCUS especially in district hospitals is an invaluable resource that can hasten diagnosis and treatment for AD.

038

CONCEALED KILLER: CASE REPORT OF TRAUMATIC PLACENTAL ABRUPTION

Lee Chin Leong, Ezzatul Alia Md Zubir Ansori
Corresponding author email: lechin92@gmail.com

Introduction: Placental abruption (PA) is the premature separation of placenta from the inner wall of the uterus. Abruptions account for 1% of pregnancies, and traumatic causes are uncommon. PA poses a significant maternal and fetal mortality risk, requiring urgent management.

Case Presentation: We report a case of a 33-year-old para 3+1, came after a motor-vehicle collision complaining of abdominal pain and per-vaginal bleeding. She was initially tachycardic but normotensive. Abdominal examination showed guarded abdomen. Bedside EFAST initially showed no free fluid, and a vaginal examination showed minimal oozing from os. TAS done showed no retro-placental clot and strong fetal heart. Fetus was dated around 16 weeks POA. She was sent for imaging and came back in a state of shock and in DIVC (confirmed via bedside fibrinogen). Massive transfusion protocol was activated. A repeated TAS showed absent fetal doppler and free fluids in Morrison's pouch. She was sent to the OR for emergency hysterotomy. Post-op notes showed multiple pelvic ligament hematomas with retroplacental clots. Fetus was delivered without signs of life. She had an estimated blood loss of 5L but was discharged post-op day 9.

Discussion: Traumatic placental separations are rare. It is believed to be due to counter-coup mechanism causing rupture of decidual vessels in the placenta. Most cases of PA have concealed bleeding. Sonographic findings of retroplacental clots as reported by Glantz and co reported the sensitivity, specificity, positive and negative predictive values of ultrasonography for PA to be 24%, 96%, 88%, and 53%, respectively. While the pelvic ligament injury further conceals the bleeding. Acute disseminated intravascular coagulation occurs when placental separation exceeds 50%, which worsens patient's survivability.

Conclusion: This case highlights the importance of clinical history and examinations for PA. Sonographic findings alone, or lack thereof, should not be used as evidence for the diagnosis of PA. Early diagnosis with immediate definitive management would lead to more favourable maternal outcome.

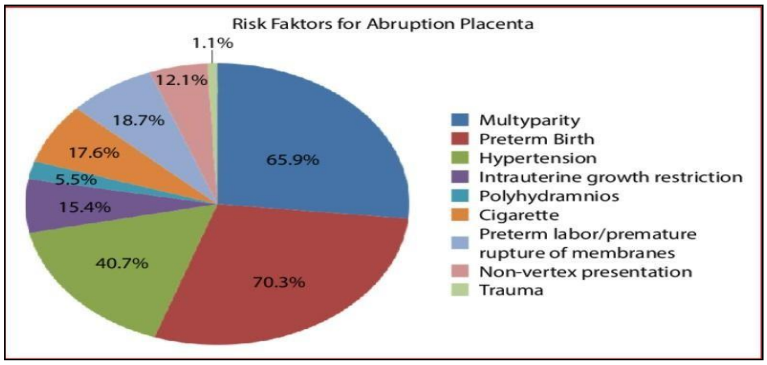


Chart 1. Risk factors of placental abruption from retrospective study done by B. Cakmak 2018

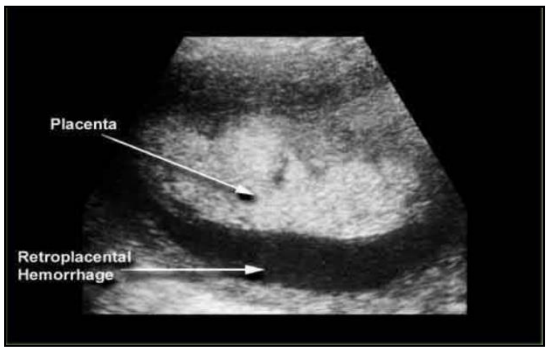


Figure 1: Retroplacental haemorrhage from abdominal sonography

Figure 2: Retroplacental clot as seen in abdominal sonography

039

CLOSED-LOOP VENTILATION: A NEW VENTILATION STRATEGY FOR SEVERE DIABETIC KETOACIDOSIS

Fatin Izzati MA[1], Abdul Rasyid A[1], Mohd Hafyzuddin MY[1], Abdul Muhaimin NA[1]

[1]Pusat Perubatan Universiti Malaya, Kuala Lumpur, Malaysia
Corresponding author email: fatinzzatimohammedazmi@gmail..com

Introduction: Closed-loop ventilators (CLVs) are advanced mechanical ventilators (MV) that automatically adapt and adjust ventilation settings based on patient feedback, differing from open-loop ventilators (OLVs) where clinicians preset parameters. Diabetic ketoacidosis (DKA) is a life-threatening complication of diabetes, often requiring MV to anticipate the effect of respiratory compensation.

Case: A 65-year-old with severe DKA and Pneumonia was intubated and connected to a CLV (INTELLIVENT-Adaptive Support Ventilation). The ventilator was set to "ARDS" condition, with automatic adjustments for Percentage Minute Volume (%MinVol), Positive End-Expiratory Pressure (PEEP), and Fraction of Inspired Oxygen (FiO2). Pulse oximetry (SpO2) and end-tidal carbon dioxide (EtCO2) targets were defined. Simultaneously, the patient received DKA treatment and antibiotics. Blood Gas monitoring showed improvements without manual ventilator adjustments in the ED and he subsequently admitted for continued care.

Discussion: In severe DKA, CLV offers individualized support by adapting settings to changes in respiratory mechanics. The adaptive mode uses EtCO2 and SpO2 sensors to automate CO2 elimination and oxygenation parameters. “CO2 Elimination” adjusts %MinVol, while the “Oxygenation” component automates PEEP and FiO2 based on the ARDSnet algorithm. Clinicians now have the new role by deciding the target rather than presetting the parameters.

Conclusion: Managing severe DKA requires a comprehensive approach, including hemodynamic control, addressing metabolic and electrolyte derangements, and ventilation strategies. CLV proves effective in optimizing respiratory support as this technology streamlines ventilator management, allowing clinicians to focus on defining target parameters while automation adjusts settings. As medical technology advances, CLV becomes a valuable tool in critical care, enhancing patient outcomes and simplifying complex treatment strategies.

040

HIGH FLOW NASAL CANNULA AS A MODALITY OF OXYGEN THERAPHY IN HEMODYNAMICALLY UNSTABLE PULMONARY EMBOLISM

Shatiya Devi T[1],-R.Periyanayaki R.M.R[1]
[1]Hospital Cyberjaya, Selangor, Malaysia
Corresponding author email: shatiyadevi@rocketmail.com

Introduction: Hemodynamically unstable pulmonary embolism usually risks one's life due to reduced venous return as well as systemic hypoxia. This situation frequently deteriorates requiring intubation for impending respiratory collapse. However, early administration of High flow nasal cannula (HFNC) remains as a viable alternative of oxygen therapy in these cases.

Case: We present a case of 59 years old, Malay lady with underlying hypertension and a recent history of closed left tibia fracture presented with shortness of breath for 3 days, with exertional dyspnea. Upon assessment, noted patient was tachypneic with respiration rate of 28/min, blood pressure of 79/56 mmHg, heart rate of 115 bpm, afebrile and oxygen saturation of 87% under 15L/min high flow mask. Bed side ultrasound revealed IVC 2.3cm, extremely dilated right atrium and ventricle, hypokinetic right ventricle, McConnell's D sign positive. Computed tomography pulmonary angiogram (CTPA) of the patient showed presence of saddle pulmonary embolism at bifurcation of the pulmonary trunk. Patient was started on HFNC with flow of 60L/min/Fio2: 0.7, IVI streptokinase 250000unit and inotropes were initiated. Subsequently, patient able to wean down to venturi mask 40% after 48hours. Patient made good progress and was discharged home after 5 days.

Discussion: HFNC is a modality of non-invasive ventilation (NIV) which is able to provide a maximum flow of 60L/min with 100% oxygen. HFNC able to deliver high constant Fio2 in a comfortable manner. So, it is well tolerated compared to other NIV. This also reduces the length of admission in ward, lowers the cost of treatment and reduces complications.

Conclusion: As a conclusion, HFNC is safe, comfortable and effective to be used in similar cases. Usage of HFNC is known for better tolerance. Therefore, usage ofHFNC reduces the risk of intubation as well as prevents circulatory collapse in hemodynamically unstable pulmonary embolism.

Date	oxygenation	ABG
22/9/23(on arrival)	High flow mask	pH: 7.3/Pco2: 33.8/Po2:47/So2: 81/HCO3: 20/lac: 3.9
22/9/23	HFNC(60L/min, Fio2 0.6)	pH: 7.4/Pco2:29.9/Po2: 54.2/So2: 86/HCO3: 20/lac: 3.1
23/9/23	HFNC(50L/min, Fio2 0.6)	pH:7.428/Pco2:30.7/Po2:298/So2: 98/HCO3:22/lac: 2.5
23/9/23	HFNC(30L/min, Fio2 0.3)	pH:7.44/Pco2:33.1/po2:114/So2: 99/HCO3:23/lac:2.2
24/9/23	Venturi mask 40%	pH: 7.47/Pco2:34.6/po2:116/SO2: 98/HCO3: 26/lac:0.9
Subsequently wean down to nasal prong 3L/min and then to room air		

Figure 1: Table of ventilation and result of arterial blood gas

Figure 2: The ECHO of 4 apical chamber view

Figure 3: The ECHO of PSAX view

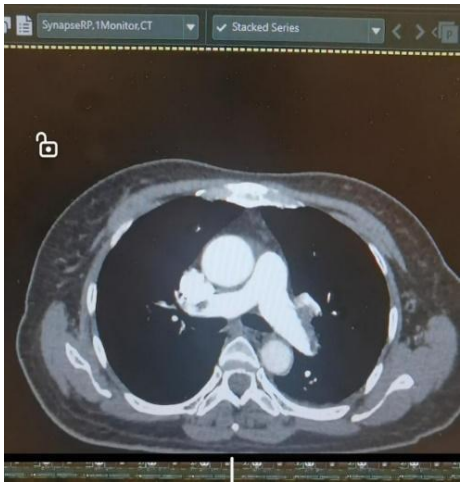


Figure 4: The CTPA of pulmonary embolism

Keyword: high flow nasal cannula, unstable pulmonary embolism, oxygenation

041

EVALUATION OF AN EMERGENCY PHYSICIAN PERFORMED ULTRASOUND GUIDED REGIONAL ANESTHESIA SERVICE IN THE EMERGENCY DEPARTMENT

Theysinthia Thivya Naidu a/p Rajendran Naidu[1], Khirthika R Ramasamy[1], Gurjeet Singh a/l HarvendharSingh[1], Nabil Muhammad bin Haji Al Kuddoos, Muhamad Syis bin Zulkipli,
[1]Hospital Selayang.
Corresponding author email: thia.naidu@gmail.com

Introduction: Regional anaesthesia has become a prominent component of multimodal pain management in emergency medicine, and its use has increased rapidly in recent decades. The objective is to improve the effectiveness of ultrasound-guided nerve blocks, as a key element of multimodal pain management regimens in ED.

Methodology: Emergency physicians who have been trained in ultrasound guided regional anesthesia performing the procedure in trauma patients through a one-year period in 2023. Data was collected for all the cases who had regional anesthesia in emergency department via a standardized data collection sheet to minimize bias. The data from all the cases was then analyzed in each of its components which includes safety profiles, most common blocks, making them the possible core learning competency to focus, type and amount of medication used and the indications to perform a regional block.

Results: A total of 16 patients received emergency regional anaesthesia in our setting and no complications were observed, making it 100 % safe procedure. The most used regional blocks are Fasia iliaca block and serratus anterior block, each accounting for 31% (5). Though the types of blocks depend on the indication and the location of interest, making these most common blocks as a part of core competency learning is advised. The commonly used anesthetic agent is 1% Lignocaine, accounting for 56 % (9) at low dose (20 mls) for adequate pain relief. It is an easily available drug with rapid onset of action and short half-life, which reduces the need for ward observations. The other agents used were 2% lignocaine (31%) 5 and 0.5 % ropivacaine 13% (2). Regional anaesthesia was mainly used in trauma patients as analgesics in 43 % (7), for respiratory insufficiency with rib fractures in 19% (3), as pre-procedural agent prior to CMR/chest tube/ wound cleaning in 19% (3).

Conclusion: Regional Anaesthesia in ED is a valuable, opioid sparing tool in multi-modal pain control with a positive impact, which are safe and effective if done by trained personnel.

References:

Adrienne Malik et al, Current Emergency and Hospital Medicine Reports, 10: 54-66, 2022
Tou-Yuan Tsai et al, West J Emerg med, 23(6): 878–885, 2022
Tucker et al, AEM education and training, Volume 5, Issue 3, 2020

042

INFECTIVE BICUSPID AORTIC VALVE ENDOCARDITIS COMPLICATED WITH HEART FAILURE AND AORTOPATHY GUIDED BY POCUS

Muhammad Khidir Mohd Kamil, Mohd Anizan Aziz, Samsu Ambia Ismail[1]

[1]*Department of Emergency Medicine and Trauma, Hospital Teluk Intan*

Corresponding author email: presisoc90@gmail.com

Introduction: Bicuspid aortic valve can be complicated with heart failure and aortopathy in addition to risk of endocarditis. With increasing use of cardiac point-of-care ultrasound (POCUS), undiagnosed infective bicuspid aortic valve can be detected in a young adult who presented with acute heart failure.

Case: A 29-year-old male with no medical history presented with shortness of breath, chest pain, and increasing lethargy for a week. Upon examination, he had severe hypoxemia, dilated neck veins, S3 gallops, generalised crackles, and mitral pansystolic murmur. Electrocardiogram revealed marked hyperacute T-wave over precordial leads, left anterior fascicular block, left ventricular hypertrophy, and poor R-wave progression. Chest X-ray demonstrated cardiomegaly, cephalization, and interstitial infiltrates. Cardiac POCUS showed thickened bicuspid aortic valve, mild aortic root dilation, and severely depressed ejection fraction. Patient was mechanically ventilated and hemodynamically supported with inotropes. Despite adequate medical therapy and antibiotics, patient succumbed due to multi-organ failure.

Discussion: The increased use of POCUS allows early detection of undiagnosed bicuspid aortic valve with possible associated complications such as heart failure, infective endocarditis, and aortic aneurysm. The bicuspid aortic valve will appear as a "fish mouth" on a parasternal short axis view due to the fusion of the coronary cusps. The visualization of Mercedes Benz sign alone cannot exclude bicuspid aortic valve. In the parasternal long axis view, the aortic valve forms a dome shape during systole, and prolapse during diastole rather than opening parallel to the aorta. Surgical repair is indicated with evidence of severe aortic stenosis, regurgitation, aneurysm > 5.5 cm, or dissection.

Conclusion: The importance of cardiac POCUS allows for timely detection of undiagnosed bicuspid aortic valve with its related complications and should be considered as potential cause of heart failure in a young patient.

References:

[1] Fowles, et al. *Chest*, *75*(4), 434-440.
[2] Tzemos N, et al. *JAMA.* 2008;300(11):1317–1325. doi:10.1001/jama.300.11.1317
[3] Kahveci G, et al. *Tex Heart Inst J*. 2009;36(2):111-116.

043

A RARE COMPLICATION OF RADIAL ARTERY CATHERIZATION

Nursuraya Aini I [1], Faizal M [2], Luqman Faiz M [1], Wee LS [1], Farina MS [1], A Suhailan M [1]

[1] *Emergency Department, Institut Jantung Negara, Kuala Lumpur, Malaysia.*

[2] *Orthopaedic Department, Hospital Kuala Lumpur, Malaysia*

Corresponding author email: zaroll89@gmail.com

Introduction: Forearm or hand acute compartment syndrome is a rare but devastating complication of radial artery catherization.

Case: A 52 years old man complained of severe right forearm pain, after radial artery catherization performed 2 days ago. The pain started yesterday and was associated with swelling, tightness and numbness over his fingers. Physical examination showed a swollen tense right forearm with a palpable but weak radial pulse. The severe pain persisted despite opioid analgesics. A doppler ultrasound performed on the puncture site showed minimal hematoma with no evidence of arterio-venous (AV) fistula or pseudoaneurysm. The arteries initially showed normal doppler waveform. Acute compartment syndrome (ACS) was suspected and he was referred to the orthopaedic surgeon. The ultrasound doppler was repeated later which showed an absent flow over right radial artery. He underwent right forearm fasciotomy, carpal tunnel release and radial artery exploration. Intra-operative findings were consistent with ACS.

Discussion: The radial artery catheterization is preferred due to lower risks of bleeding and vascular complications. However, a simple forearm hematoma can progress to ACS, which is characterized by increase in pressure within a fascial compartment compromising arterial flow leading to ischemia and necrosis. It remains a clinical diagnosis and the most sensitive sign is disproportionate pain resistant to analgesics. A doppler US of the artery helps in ruling out other diagnosis which includes pseudoaneurysm, AV fistula and hematoma.

Conclusion: ACS of the hand or forearm although rare, are known complications that have been reported after radial arterial catherization. It is essentially a clinical diagnosis. A doppler US is important to exclude other potential complications post angiography, but does not rule out ACS. A serial US doppler examination maybe helpful if the diagnosis of ACS is suspected.

044

UPPER EXTREMITY THROMBOSIS AND ULTRASOUND ACCELERATED CATHETHER-DIRECTED THROMBOLYSIS

S Khadijah SU, A Suhailan M, Farina MS,

Emergency Department, Institut Jantung Negara, Kuala Lumpur, Malaysia.

Corresponding author email: aija161@gmail.com

Introduction: Upper extremity deep venous thrombosis (UEDVT) is an uncommon condition. Early diagnosis and intervention are crucial as complications can be debilitating.

Case Report: A 67 years old male complained of progressive swelling of his left hand, forearm and upper arm, over several days. Upper extremity (UE) ultrasound was performed and showed deep venous thrombosis (DVT) in the left basilic vein and left axillary vein, extending to left subclavian vein with thrombosed left internal jugular vein. Due to his symptoms and extensive UEDVT, a decision was made for an interventional therapy with Ultrasound accelerated Catheter-directed Thrombolysis (CDT). This is a catheter directed ultrasound pulse therapy, with alteplase infusion to the thrombosed UE veins over a period of 24-48 hours. Ultrasound doppler post therapy showed resolution of the UEDVT. He was discharge on oral anticoagulant therapy. He was treated for tuberculosis by his primary team, which was thought to be the cause that provoked his UEDVT.

Discussion: Upper extremity deep vein thrombosis (UEDVT) is relatively rare, and can be divided into unprovoked primary or secondary UEDVT. Most cases occur secondary to malignancy, intravenous catheters, or pacemaker cables. Ultrasonography is the first-line imaging test for diagnosing UEDVT, while computed tomography venography is the gold standard diagnostic modality. The treatment of UEDVT typically involves long term anticoagulation therapy. Catheter-directed thrombolysis, percutaneous transluminal angioplasty, or stenting may be considered in cases of severe UEDVT with impending limb loss, or in patients with severe symptoms. Post thrombotic syndrome is a known debilitating complication of UEDVT, and can impair one's quality of life.

Conclusion: Ultrasound accelerated Catheter-directed Thrombolysis is an effective therapy which should be considered as a treatment option for extensive UEDVT.

045

COMPARISON OF NEUTROPHIL GELATINASE-ASSOCIATED LIPOCALIN AND RENAL RESISTIVE INDEX AS ACUTE KIDNEY INURY PREDICTOR IN CRITICALLY ILL PATIENTS AT ICU H. ADAM MALIK HOSPITAL MEDAN

Muhammad Aldi Rivai Ginting, Muhammad Aripandi Wira*, Achsanudin Hanafie, Bastian Lubis, Ade Winata

Fellowship Critical Care Department of Anaesthesiology and Intensive Therapy, Medical Faculty of Sumatera Utara University, H Adam Malik General Hospital, Medan

Corresponding author email: andiwira01@gmail.com

Introduction: Acute kidney injury (AKI) is a complication found in critically ill patients. Neutrophil gelatinase associated lipocalin (NGAL) level is increased a few hours after tubular damage occurred and can predict AKI more significantly than serum creatinine. Renal resistive index (RRI) is also a good marker in predicting the early stage of AKI.

Method: This was an observational prospective cohort study and conducted in ICU at H. Adam Malik Hospital Medan in April-May 2021. Inclusion criteria are critical patients aged 18–65 years with 1st and 2nd priority level. Consecutive sampling was used. Resistive Index (RI) measured using USG Doppler by researcher and the results confirmed by ICU supervisors, while urine NGAL level measured within 3 h after ICU admission. Plasma urea and creatinine level measured after 24 h after ICU admission.

Results: A total of 40 samples were collected; percentage of men and women are 66–35%, respectively (p = 0.001). There was a significant difference RI between AKI group and non-AKI group (0.719 ± 0.060 and 0.060 ± 0.077, respectively) (p = 0.001). RI has a sensitivity of 71%, specificity of 84%, and accuracy of 87% in predicting occurrence of AKI with AUROC = 0.873. Meanwhile, NGAL has a sensitivity, specificity, and accuracy (66%, 89%, 78%, respectively) in early prediction of AKI incidence in critically ill patients.

Conclusion: RI value was higher in AKI group than non-AKI group. RRI has better sensitivity than NGAL in predicting incidence of AKI.

Table 1: Predictive value of RRI

(%)	TP	TN	FP	FN	Sensitivity	Specificity	Accuracy	PPV	NPV
RRI	6 (28.6)	3 (15.8)	16 (84.2)	15 (71.4)	71	84	87	78.9	27

TP: True positive, TN: True negative, FP: False positive, FN: False negative, PPV: Positive predictive value, NPV: Negative predictive value. RRI: Renal resistive index.

Table 2: Predictive value of NGAL

(%)	TP	TN	FP	FN	Sensitivity	Specificity	Accuracy	PPV	NPV
NGAL	14 (66.7)	17 (89.5)	2 (10.5)	7 (33.3)	66	89	78	87	29

TP: True positive, TN: True negative, FP: False positive, FN: False negative, PPV: Positive predictive value, NPV: Negative predictive value. NGAL: Neutrophil gelatinase-associated lipocalin.

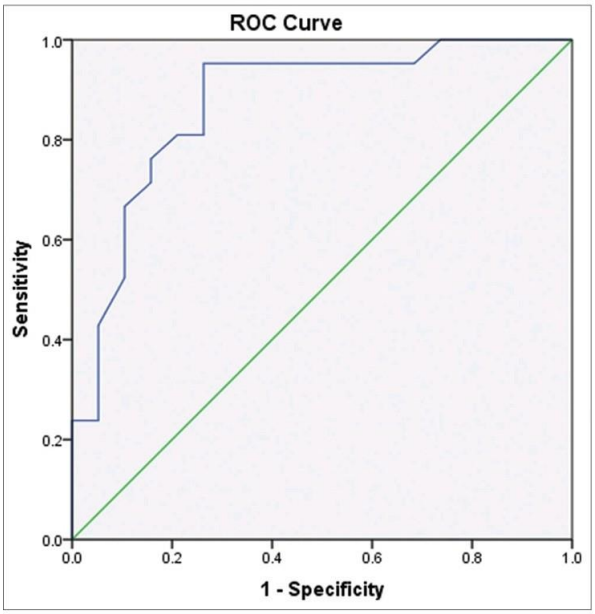


Figure 1: Renal resistive ROC curve

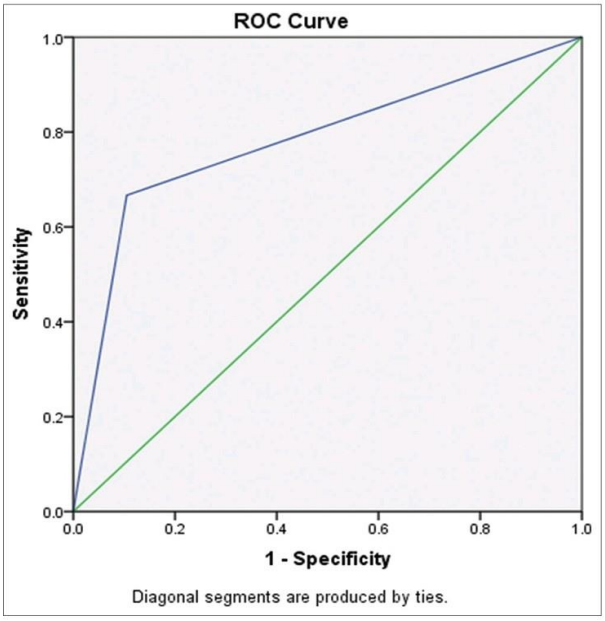


Figure 2: Neutrophil gelatinase-associated lipocalin ROC curve

Keyword: Neutrophil Gelatinase Associated Lipocalin, Renal Resistive Index, Acute Kidney Injury Predictor, Critically Ill

References:

1. Banai A, Rozenfeld K, Levit D, Merdler I, Loewenstein I, Banai S, et al. Neutrophil gelatinase-associated lipocalin (NGAL) for the prediction of acute kidney injury in chronic kidney disease patients treated with primary percutaneous coronary intervention. IJCHeartVasc.2021;32:1-5. https://doi.org/10.1016/j.ijcha.2020.100695 PMid:33364336

2. Case J, Khan S, Khalid R, Khan A.Epidemiology of acute kidney injury in the intensive care unit. Crit Care Res Pract.2013;2013:479730. https://doi.org/10.1155/2013/479730 PMid:23573420

3. Khawaja S, Jafri L, Siddiqui I, Hashmi M, Ghani F. The utility of neutrophil gelatinase-associated Lipocalin (NGAL) as a marker of acute kidney injury (AKI) in critically Ill patients. Biomarker Res. 2019; 7:4. https://doi.org/10.1186/ s40364-019-0155-1 PMid:30834123

4. Li H, Yu Z, Gan L, Peng L, Zhou Q. Serum NGAL and FGF23 may have certain value in early diagnosis of CIN.Renal Failure.2018;40(1):547-53. 22X.2018.1487860 PMid:30278796

046

UNVEILING THE POTENTIAL OF MODIFIED ALBUMIN 25% IN THERAPEUTIC PLASMA EXCHANGE FOR MYASTHENIC CRISIS PATIENT

Dede Subrata[1], Bastian Lubis[2]

[1]Fellowship Critical Care Department of Anesthesiology and Intensive Therapy Medical Faculty of University of Sumatera Utara, Medan, Indonesia
[2]Staff of Department of Department of Anesthesiology and Intensive Therapy Medical Faculty of University of Sumatera Utara, Medan, Indonesia

Corresponding author email: dedesubrata79@gmail.com

Introduction Myasthenic crisis is a life-threatening complication of myasthenia gravis that requires advanced critical care.[1] Therapeutic plasma exchange (TPE) might be prescribed in addition to respiratory support which removes acetylcholine receptor antibodies. The fluid volume removed must be exchanged with fresh frozen plasma (FFP), albumin, saline, or a combination of the albumin and saline, usually albumin 5%.[3]

Case Presentation A 30-year-old man was admitted to ICU due to a myasthenic crisis and had a history of intravenous immunoglobulin (IVIg) therapy for two months with the same complaint. The patient was prepared for TPE with a replacement target 1,5 times the plasma volume. Based on his body weight and hematocrit, a replacement volume of 3.000 mL was prescribed with modified 25% albumin in 500 mL saline. Rapid clinical improvement was achieved after 6 hours of TPE and the patient was extubated from mechanical ventilation 8 hours after completion of TPE.

Discussion Myasthenic crisis can be treated acutely with TPE and showed a higher response rate than other modalities, such as IVIg. [4, 5] Albumin 5% and FFP have been widely chosen to minimize the risk of complications. [3, 6] In low resource albumin 5%, mixing 100 mL albumin 25% to 400 mL saline, which obtains a final concentration of albumin 5% for a replacement solution, might be used. In this report, the modified solution did not affect hemodynamics and albumin levels but decreased extrinsic coagulation factors for 24 hours.[7]

Conclusion Utilizing albumin 25% as fluid replacement is effective for myasthenic crisis patients who underwent plasma exchange. Depletion of coagulation factors is a concern when using this modification solution.

Key words: myasthenic crisis, therapeutic plasma exchange (TPE), modified Albumin 25%

References:

[1] Claytor B, Cho S-M, Li Y. Myasthenic crisis. *Muscle Nerve* 2023; 68: 8–19.

[2] Ipe TS, Davis AR, Raval JS. Therapeutic Plasma Exchange in Myasthenia Gravis: A Systematic Literature Review and Meta-Analysis of Comparative Evidence. *Frontiers in neurology* 2021; 12: 662856.

[3] Kohli R, Geneen LJ, Brunskill SJ, et al. Assessing efficacy and safety of replacement fluids in therapeutic plasma exchange: A systematic scoping review of outcome measures used. *J Clin Apher* 2022; 37: 438–448.

[4] Pavlekovics M, Engh MA, Lugosi K, et al. Plasma Exchange versus Intravenous Immunoglobulin in Worsening Myasthenia Gravis: A Systematic Review and Meta-Analysis with Special Attention to Faster Relapse Control. *Biomedicines*; 11. Epub ahead of print 2023. DOI: 10.3390/biomedicines11123180.

[5] Kumar R, Birinder SP, Gupta S, et al. Therapeutic plasma exchange in the treatment of myasthenia gravis. *Indian J Crit care Med peer-reviewed, Off Publ Indian Soc Crit Care Med* 2015; 19: 9–13.

[6] McLeod BC. Therapeutic apheresis: use of human serum albumin, fresh frozen plasma and cryosupernatant plasma in therapeutic plasma exchange. *Best Pract Res Clin Haematol* 2006; 19: 157–167.

[7] Hafer C, Kielstein JT. Pro: High dose of therapeutic plasma exchange—mind the gap! *Nephrol Dial Transplant* 2017; 32: 1457–1460.

047

THE CRYING LIMB: BEDSIDE ULTRASOUND DIAGNOSIS OF ACUTE LIMB ISCHEMIA

M. Avalani[1], M.F Kasmuri[1], M.H Hanifah[1]

[1]Emergency and Trauma Department, Labuan Hospital, Federal Territory of Labuan, Malaysia

Corresponding author email: meesha187@gmail.com

Introduction: Acute limb ischemia (ALI) is defined as a disruption of arterial blood flow to an extremity caused by thromboembolic pathology [5]. The symptoms of acute limb ischaemia are the six P's, pain, pallor, paresthesia, poikilothermia, pulselessness, and paralysis [2].

Case discussion: A 71 years old gentleman presented with right leg pain, numbness and weakness 1 hour before presentation to ED and triaged to Yellow Zone on wheelchair. Patient denied fever, trauma and no other neurological complaints. Other review of systems was unremarkable. Patient's medical history included diabetes, hypertension, dyslipidemia and atrial fibrillation. Patient's BP was 160/102; pulse 81bpm; other parameters were normal. His right leg was cold, no pulsation of popliteal and dorsalis pedis artery. O_2 saturation was unrecordable over the toes. Bedside Doppler was inaudible over the right popliteal and femoral artery with absent colour flow over both arteries. 2 points compression test was negative bilaterally.

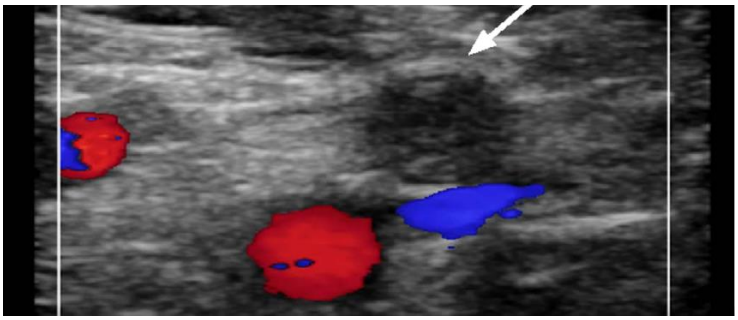


Figure 1 : Absent colour flow in the right common femoral artery

Patient was started on IV infusion of heparin with emergent referral to Surgical team for ALI. After CTA of lower limbs, right femoral embelectomy was performed.

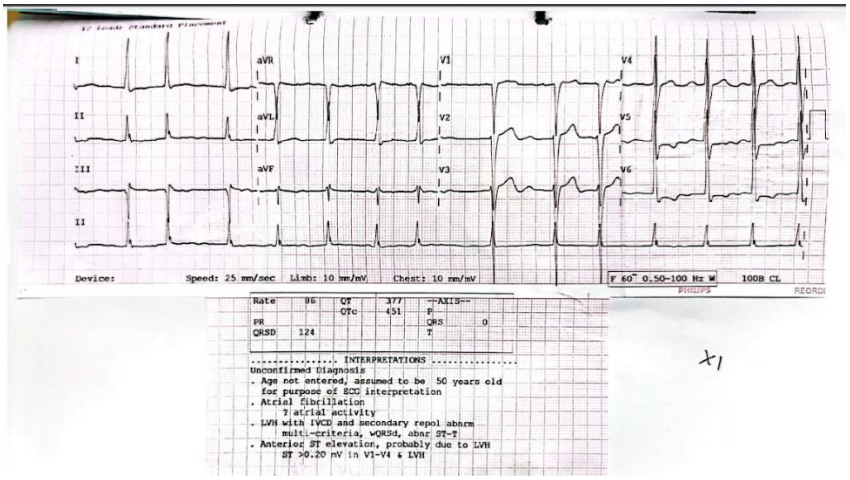


Figure 2: ECG of patient showing AF with controlled heart rate

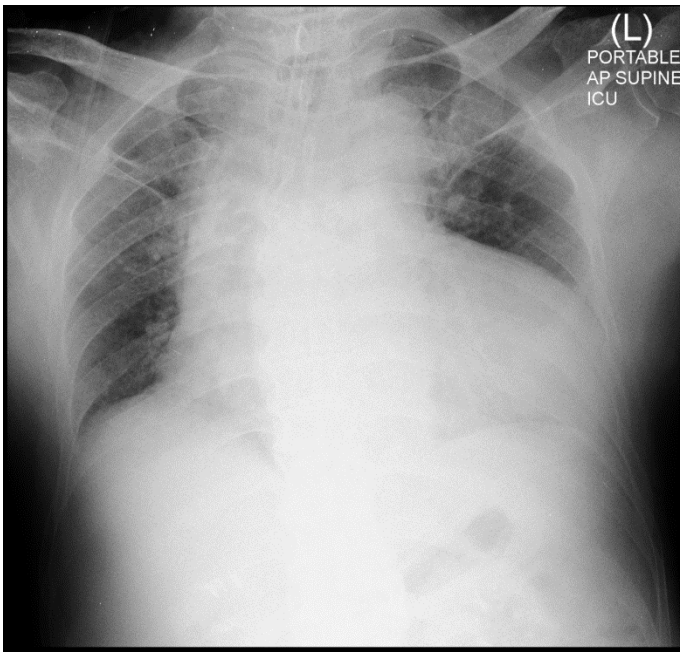


Figure 3: CXR of patients showing cardiomegaly otherwise clear lung field

Figure 4. CTA of bilateral lower limb showing long segment of arterial thrombosis involving the right external iliac artery until mid-superficial femoral artery

Figure 5. Intra-operative finding, thrombus in right SFA (Superficial Femoral Artery) about 25cm, Multiple thrombus in CFA (Common Femoral Artery), minimal thrombus in PFA (Profunda Femoris Artery). Post embolectomy, there was good backflow in SFA and PFA and gushing blood from CFA.

Intra-operatively, there was thrombus in right superficial femoral artery about 25cm & multiple thrombus in common femoral artery. Post operatively patient was able to ambulate with supervision and given follow up appointment under Surgical Outpatient Clinic.

Discussion: Bedside Ultrasound (BUS) is a reliable non-invasive imaging modality [4]. On contrary, CTA are time-consuming modalities and they require potentially nephrotoxic contrast media which can be harmful in patients having chronic renal insufficiency [3]. BUS was compared with angiography and has been shown to detect arterial disease with an overall sensitivity of 92%, a specificity of 99%, a PPV of 91%, and a NPV of 100% [1].

Conclusion: In patients presenting with history suggestive of ALI, BUS can be an important bedside tool in ED to diagnose and localise emboli or thrombus causing the arterial occlusion.

References:

1. Aly S *et al*. British Journal of Surgery, 85(8):1099-1102,1998
2. Braun R *et al*. The Journal of Emergency Medicine, 49(6):1-6,2015
3. Martinelli O *et al*. Journal of Ultrasound, 24(4):471-479,2021
4. Rolston DM *et al*. The Journal of Emergency Medicine, 45(6):897-900,2013
5. Yadav AK *et al*. Journal of BP Koirala Institute of Health Sciences, 3(1):129-134,2020

Informed consent obtained from the participant

048

CLOT IN TRANSIT: A FLOATING THREAT IN MOTION

Shalini B[1], Shahzuwaty S[2]
Corresponding author email: atie_212002@yahoo.com

Introduction: Clot in transit or inferior vena cava thrombosis (IVCT) is a rare, life-threatening condition with a free-floating echogenic mass on the right side of the heart and superior or inferior vena cava. Early diagnosis is crucial, and Point-of-care ultrasonography (POCUS) enables timely treatment.[1]

Case report: A 72-year-old smoker with hypertension presented with a 2-month cough, right-sided chest pain, shortness of breath and appetite loss. Examination revealed right tracheal deviation and ultrasound showed thrombus in inferior vena cava measuring 3 centimetres from right atrium opening. Two-point compression was normal. There was pleural effusion and opacities on right lung seen in chest radiograph. Contrast enhanced computed tomography of the thorax showed small inferior vena cava thrombosis, right pleural effusion and endobronchial mass with adrenal, liver and nodal metastasis.

Discussion: IVCT is an uncommon condition linked to significant morbidity. It can be classified into primary or secondary thrombosis based on the underlying pathophysiology. The diagnosis includes both clinical probability assessment as well as the imaging evaluation. The epidemiology of IVCT is between 4 to 18 percent.[1] Primary or idiopathic IVCT occurs without an unknown cause. Therefore, secondary or provoked IVCT can be categorized as with or without caval obstruction which causes an outflow obstruction. Timely evaluation of IVCT is essential and should encompass both clinical examination and ultrasound or cross-sectional imaging. Advanced imaging modalities provide evidence regarding thrombus location, nature and anatomical considerations for treatment. Cross-sectional imaging can differentiate isolated, benign or malignant causes for thrombosis.[2]

Conclusion: IVCT is a rare yet potentially life-threatening condition. POCUS emerges as an effective diagnostic modality for the early detection of IVCT in emergency settings. This facilitates prompt diagnosis and early initiation of treatment.

References:

1. Patel AN, et al. Thromb Res.14(8):e28481 2022
2. Shi W et al. Thromb Res.149:9-16. 2017

049

OBLIQUE AXIS – IN PLANE TECHNIQUE OF ULTRASOUND GUIDED CENTRAL VEIN CANNULATION: A VIABLE OPTION

Noor Hafidz[1], Norman Hardi Utama[2], Andi Ade Wijaya Ramlan[1,3]

[1]Department of Anesthesiology & Intensive Care, University of Indonesia Hospital, Depok, West Java, Indonesia
[2]Department of Anesthesiology & Intensive Care, Persahabatan General Hospital, Jakarta, Indonesia
[3]Department of Anesthesiology & Intensive Care, Cipto Mangunkusumo National General Hospital, Jakarta,Indonesia

Corresponding author email: noorhafidz@gmail.com

Introduction: Placing a central vein catheter (CVC) guided by ultrasound is widely accepted as an established method in emergency and critical care.[1] Two common technique for central vein cannulation using ultrasound are short axis out of plane (SA-OP) and long axis in plane (LA-IP). In this case series of 3 patients, we explore oblique axis in plane (OA-IP) technique for cannulation of internal jugular vein (IJV) and subclavian vein (SCV) using ultrasound.

Case 1: 62 years old female, body weight (BW) 60 Kg, height (H) 150 cm, Admitted to the intensive care unit (ICU) for respiratory distress. A Left IJV CVC was placed using OA-IP technique, needle trajectory from craniolateral to caudomedial. Left IJV diameter in short axis was 7,4 mm, in oblique axis was 19,7 mm.

Case 2: 59 years old female, BW 65 kg, H 148 cm, intubated in emergency room for respiratory distress. A left SCV catheter was placed using OA-IP technique. Left SCV diameter in short axis was 9,2 mm, while in oblique axis was 23,1 mm.

Case 3: 41 years old male, BW 40 Kg, H 145 cm, intubated in emergency room for severe septic shock. A left IJV was placed using OA-IP technique, needle trajectory from craniomedial to caudolateral. Vein diameter was 5,3 mm and 15,7 mm in short and oblique axis respectively.

Discussion: Patients had improved vessel target area in oblique axis, 2,6-2,9 times compared to short axis. OA-IP with needle trajectory craniomedial - caudolateral yield the same result compare to craniolateral – caudomedial, no inadvertent puncture of ipsilateral carotid artery. This is an issue that DiLisio et al [2] addressed, but not for us. The process of wire and catheter insertion in OA-IP is comparable to SA-OP & LA-IP. This technique needs constant needle visualization and ability to adjust ultrasound view to allow optimum result, therefore suitable for more experienced operator.

Conclusion: OA-IP is a viable option and alternative to SA-OP and LA-IP for central vein cannulation.

Key words:
Central venous catheter, oblique axis – in plane, cannulation, ultrasound

References:

1. Lamperti, M et al. Intensive Care Med 38:1105–1117. 2012
2. DiLisio, R et al. Journal of Cardiothoracic and Vascular Anesthesia 26:982-984. 2012

Conflict of interest
Author declares no conflict of interest. Informed consent for case publication has been obtained for every patient.

051

CORRELATION OF NEWS 2 AND INFLAMMATION BIOMARKERS NLR, CRP, IL-ON THE SEVERITY OF COVID-19 PATIENTS IN HAJI ADAM MALIK GENERAL HOSPITAL MEDAN

Apriandeny Haithami, Bastian Lubis, Rommy Fransiscus Nadeak

Fellowship Critical Care Department of Anesthesiology and Intensive Therapy, Faculty of Medicine, University of Sumatera Utara, H Adam Malik General Hospital, Medan, Indonesia

Corresponding author email: apriandenyhaithami@gmail.com

Introduction: Coronavirus Disease 19 (COVID-19) is a disease that can cause a series of inflammatory processes in its pathogenesis. C-reactive protein (CRP), interleukin 6 (IL-6), neutrophile lymphocyte ratio (NLR), and National Early Warning Score (NEWS) 2 are some of the many parameters considered in their use in this disease. Aim of this study are describing the values of NEWS2, CRP, IL-6, and NLR, and analyzing their correlation to the degree of COVID-19 severity.

Method: This study was conducted in 2021, involving 47 samples, and carried out the calculation of NEWS2, examination of IL-6, CRP, as well as risk assessment based on NEWS2 of patients with confirmed COVID-19 at RSUP HAM.

Results: There was a correlation found between NEWS2 (rho 0.265, p 0.360), IL-6 (rho -0.340, p 0.010) and the severity of COVID-19 disease (95% CI, $p < 0.05$). No correlation was found between NLR and CRP with the degree of COVID-19 disease.

Conclusion: There is a correlation between NEWS2 and IL-6 on the degree of COVID-19 severity.

Keywords: NEWS 2, NLR, IL-6, Covid-19

References:

1. Baker KF, Hanrath AT, van der Loeff IS, Kay LJ, Back J, Duncan CJ. National Early Warning Score 2 (NEWS2) to identify inpatient COVID-19 deterioration: a retrospective analysis. Clin Med (Northfield Il). 2021;21(2): clinmed.2020-0688.

2. Annisa. Virologi sars-cov-2 dan pengaruhnya terhada penggunaan masker dan physical distancing. In: Airlangga E, Ariani R, editors. Ragam Penanganan dan Pencegahan COVID-19 Di Rumah Sakit dan Klinik Primer (FK UMSU Mengabdi). 2020.

3.. Vafadar Moradi E, Teimouri A, Rezaee R, Morovatdar N, Foroughian M, Layegh P, et al. Increased age, neutrophil-to-lymphocyte ratio (NLR) and white blood cells count are associated with higher COVID-19 mortality. Am J Emerg Med [Internet]. 2021; 40:11–4.

4. Zhang J, Hao Y, Ou W, Ming F, Liang G, Qian Y, et al. Serum interleukin-6 is an indicator for severity in 901 patients with SARS-CoV-2 infection: a cohort study. J Transl Med [Internet]. 2020;18(1):1–8.

5. Cui Z, Merritt Z, Assa A, Mustehsan H, Chung E, Liu S, et al. Early and Significant Reduction in C-Reactive Protein Levels After Corticosteroid Therapy Is Associated with Reduced Mortality in Patients With COVID-19. J Hosp Med. 2021;16(3):142–8.

052

DANCING IN A MUDDY SAC

Aminah Nurfarhana M[1], Shahzuwaty S[2], Liew KK[3], Teoh AT[4]

Corresponding author email: atie_212002@yahoo.com

Introduction: A pericardial effusion is a collection of fluid within the potential space of the serous pericardial sac. When a large volume collects in this space, ventricular filling is compromised leading to embarrassment of circulation. This is known as cardiac tamponade.

Case presentation: 41 years old active smoker and drug abuser presented with chest discomfort for 3 days, pricking in nature, radiated to right upper limb and aggravated during inspiration. Patient continuously took morphine to reduce the pain. Upon arrival, patient alert, conscious, pupil pin point, BP 119/77, HR 122/min, afebrile and saturation 93% under room air. Lung was clear but muffled heart sound. ECG showed Sinus rhythm with high take off V2-V5, repeated ECG shown ST Elevation v2-V5 with Slopping T-P segment. Bedside echo shows dilated chambers with massive pericardial effusion with tamponade effects. Patient was referred to cardiology team. Emergency pericardiocentesis was done with pigtail insertion through sub-xiphoid yield 600 cc purulent discharge. Patient has started on broad spectrum antibiotics and recover well.

Discussion: Pericardial empyema is a rare case that can be found in less than 1%, especially in IV drug users [1]. The incidence pericardial empyema has declined since the era of broad-spectrum antibiotics [2], but it remains an important differential diagnosis since, untreated, the combination of tamponade and sepsis results in a mortality rate approaching 100%

Conclusion: Atypical presentation in immunocompromised community needs to be diagnosed early and proper treatment should be initiated as soon as the diagnosis has been concluded. As in district hospital, to perform pericardiocentesis with limitation of experienced person and equipment need to done urgently for life saving purpose.

REFERRENCE

1. Am J Med Sci. Jan 2030, 365(1):109-113
2. P. Rachel James, European Journal of Internal Medicine, Volume 12, Issue 4 ,July 2001

053

COMPREHENSIVE MANAGEMENT OF TETANUS DISEASE

Dwi Yulie Cynthia Nasution, Rommy Fransiscus Nadeak, Bastian Lubis, Ade Winata

Fellowship Critical Care Department of Anesthesiology and Intensive Therapy, Medical Faculty of Sumatera Utara University, H Adam Malik General Hospital, Medan

Corresponding author email: kintankinto2020@gmail.com

Introduction: Tetanus is an acute toxemia disease caused by clostridium tetani's tetanospamin. Gram positive bacteria in the form of anaerobic stems, the spor can survive on the ground and infect contaminated injuries. Severity Tetanus can be assessed with Several scoring system, this case report by phillips scoring. The incidence of tetanus in the world ranges from 1 million cases every year with deaths that vary in each country.

Case Report: A 37-year-old male with decreased consciousness, Convulsion, mouth stiffness, abdominal mascular defense, He had a history of nail puncture on his feet. No record of tetanus vaccination before. There were meningismus, trismus, abdominal rigidity, opisthotonus and risus sardonicus. The prognosis based on phillips score is moderate severity score 17. Treatment were D5% infusion, kabiven infusion, diazepam drip, immunoglobulin, metronidazole, ceftriaxon, Amikasin and wound care. He underwent percutaneous dilatation tracheostomy in fourth day admission and connected with ventilator. He had pneumonia after taken ventilator and also controlled hypertension.

Discussion: General management according to WHO recommendations; patient treated in the special rooms separately from other patients. Total of administrotion tetanus antitoxin use human TIG 3000 units IM in the differeat site location. Patients do not accepted tetanus toxoid vaccination during hospital treatment. Tetanus will not give immunity becouse the number of toxins that slightly shows clinical manifestations. Therefore, patient who have just recoveres from tetanus still require vaccination in the convalesen phase. The Selection of metronidazale and ceftriaxon antibiotics has been appropriate for recommendations, it is expected to will anaerobic bacteria. To control musde spasm, the patient gets a diazepan drip. Patient respiratory controlled with mechanical vlentilation through the percutaneous dilatation tracheostomy due to a decrease consciousness.

Conclusion: Tetanus can be diagnosed by anamnese and physical examination by finding one of the clinical signs in the form of trismus or risus sardonicus or painful muscle contractions, no labolatorium examination is needed. Administration of tetanus antitoxin, Antibiotics, control of muscle spasm, control of breathing and adequate liquid and nutrients becoming the pillars of the management of tetanus is successfully.

References

1. WHO Current recommendations for treatment of tetaws Toxoid immunization to reduce martality from Neonatal Tetanus. Int. Epideniol 2010; 39:10zg

2. Thwaites (L,Yen LM, Glover c, Tuan PQ Nga NTN, Parry), et.al.Predicting the clinical outcome of tetanius; the tetanius severity score. Trop Med and internet healte 2006;11(3):279-87

3. Hassel B. Tetanius ; Pathphysiology, treatment, and the possibility Of using botulinum toxin against tetanus-induced rigidity and spasms. Taxins (Basel) 2013;5(1);73-83.

4. Fink Mp,Abraham E, VINcent JL,Kochanek Pm, editions, Textbook of critical care 5 thed philalephia : Elsivier Saunders;2005.p.1401-4.

5. Black TP. Clastridium tetani(tetanus) In: Mandell GL, Bennet JE, Dolin R, editors, Princples and practice of infectorn diseasegth. Amstredam: Elsevier Saunders;2005,P.2817-22.

055

TESTICULAR TORSION: A MISDIAGNOSIS WITH IRREVERSIBLE CONSEQUENCES

Prasaniya Gunasegeran[1], Nur Syuhadah Zainol Abidin[1]

[1]*Emergency & Trauma Department, Hospital Kajang*
Corresponding author email: piscec_niya991@yahoo.com

Introduction: Testicular torsion is a time-critical acute scrotal emergency. It is diagnostically challenging to distinguish between epididymo-orchitis and testicular torsion due to overlapping clinical features of both diseases. Although the former is more common, the latter reduces the rate of testicular salvageability if delayed surgical intervention beyond golden window of six hours onset [1].

Case Report: A 22-year-old gentleman with no comorbidities presented to the ED with sudden onset of right scrotal swelling associated with pain. On examination, his vital signs were stable, and his right scrotum was enlarged and tender with overlying skin warm and erythematous. The cremasteric reflex was negative. He was diagnosed with epididymo-orchitis and discharged with antibiotic and analgesics. He returned to the ED after two days for worsening right scrotal pain. Scrotal ultrasound revealed right testicular torsion. Intraoperative findings of urgent scrotal exploration noted gangrenous right testis with twisted spermatic cord, thus right orchidectomy and left orchidopexy was performed.

Discussion: Majority of patients with acute scrotal pain in the emergency setting are young adults. Although the cremasteric reflex and Prehn's sign may be useful indicators, they are not always reliable, making diagnosis difficult [2]. Epididymo-orchitis is the most common initial misdiagnosis of torsion. In ED, point-of-care ultrasound (POCUS) of scrotum by a skilled operator is essential to screen for torsion, hence avoiding the diagnostic confusion. In this case, the delay in the definitive management of torsion, due to the delayed diagnosis, led to significant morbidity of testicular loss.

Conclusion: A high index of suspicion for testicular torsion is recommended for all patients presenting with acute scrotal pain until proven otherwise. Scrotal ultrasound facilitates prompt and accurate identification of torsion, which is imperative for the preservation of testicular viability.

References

1. Carolyn L Wang et al. J Am Coll Radiol. 16(5S):S38–43, 2019
2. Boettcher M et al. Urology 79:670–74, 2012

056

MANAGEMENT CRITICAL TREATMENT PATIENT WITH GUILLAIN-BARRE SYNDROME AND FUNGAL INFECTION IN INTENSIVE CARE UNIT

Richard Pahala S[1], Ester Lantika Ronauli Silaen[2], Bastian Lubis[3]

[1]*Fellow Critical Care RS Haji Adam Malik*
[2] *Department of Anesthesiology and Intensive Therapy, Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia*
[3]*Department of Anesthesiology and Intensive Therapy RS Haji Adam Malik*

Corresponding author email: Richard.pahala@gmail.com

Introduction: Guillain Barré syndrome (GBS) is an inflammatory disease of the peripheral nervous system (PNS) and is the most common cause of acute flaccid paralysis1**.** Patients with GBS typically present with weakness and sensory signs in the legs that progress to the arms and cranial muscles2,3**.** Fungi are responsible for approximately 20% of microbiologically documented intensive care unit (ICU) infections 4
.

Case: A woman sixty-three years old, one month before entering the hospital the patient felt cough. The patient was admitted to the hospital with shortness of breath and weakness of the upper and lower extremities. The result of EMG: poliradikuloneuropati sensory motor type degeneration axonal and demyelination GBS type AMSAN. We decided to provide three cycles of therapeutic plasma exchange (TPE) using plasmin 5%. We also gave the anti-fungal micafungin according to the results of the sputum culture, Candida glabrata. After three cycles of TPE and anti-fungal administration, the patient improved and was extubated.

Discussion: TPE is an ideal indication for treatment of neurological conditions like GBS and chronic inflammatory demyelinating polyneuropathy5. It is recommended to exchange 1-1.5 PV per session, 5-6 times in every other day regimen6. The incidence of fungal diseases in critically ill patients is thought to be increasing, most commonly involving Candida and Aspergillus species. Broad spectrum antifungals such as an echinocandin are advised7
.

Conclusion: TPE has been used as one of the treatment modalities of neurological diseases GBS. Invasive fungal infections are often difficult to diagnose and treat but with the advances in antifungal therapy, the mortality in ICU can be greatly reduced.

References:

1. Sejvar, J. J et al. Neuroepidemiology 36, 123–133 (2011).
2. Sonja E. Leonhard et al. https://doi.org/10.1038/ s41582-019-0250-9
3. Sejvar, J. J. et al. Vaccine 29, 599–612 (2011).
4. Jeanne Chatelon et al. https://doi.org/10.1007/s12325-019-01115-0
5. Shreedevi S Bobati et al. Clin Diagn Res. 2017. doi: 10.7860/JCDR/2017/27073.10480
6. Adrian Bălașa et al January 25, 2021 https://doi.org/10.3892/etm.2021.9696
7. Péter Hankovszky et al J Crit Care Med 2015 Oct; 1(4): 129–139. doi: 10.1515/jccm-2015-0025

057

THERAPEUTIC PLASMA EXCHANGE FOR MYASTHENIC CRISIS PATIENT

Adhi Setia Putra[1]. Bastian lubis[2]

[1]*Fellowship Critical Care Department of Anesthesiology and Intensive Therapy Medical Faculty of University of Sumatera Utara, Medan, Indonesia*

[2]*Staff of Department of Department of Anesthesiology and Intensive Therapy Medical Faculty of University of Sumatera Utara, Medan, Indonesia*

Corresponding author email: dradhisetiaputra@gmail.com

Introduction: The most common goal of plasma exchange therapy (TPE) is to eliminate the antibodies involved in the pathogenesis of myasthenia gravis disease. During therapeutic plasma exchange (TPE), a large amount of the patient's plasma is separated from the cellular components of the blood and replaced with a suitable fluid to remove both circulating plasma components and disease mediators. One of the automated TPE systems based on the plasma separation method is the membrane filtration TPE (mTPE) method.

Case: A 28-year-old woman with respiratory failure was referred from another hospital with recurrent myasthenia gravis. As a last resort, we decided to apply mTPE to rid plasma of toxins or harmful antibodies. After 1 mTPE sessions her condition improved and she was able to weaning from mechanical ventilation. A thoracic scan with IV contras found a nodule in the right side of superior anterior mediastinum measuring 2 x 2,4 x 2,9 cm. The nodule is seen attached to the superior vena cava and the vascular structure according to the thymoma.

Discussion: Therapeutic plasma exchange (TPE) is an extracorporeal blood purification technique that reduces the amount of circulating autoantibodies, alloantibodies, immune complexes and monoclonal proteins by centrifugation and replacement of patient’s plasma. The fluid volume removed must be replaced to avoid volume depletion.

Conclusion: Patients with Myasthenia Gravis (MG) can be treated with therapeutic plasma exchange (TPE)

References:

1. Alipour-Faz A, Shojaei M, Peyvandi H, Ramzi D, Oroei M, Ghadiri F, et al. A comparison between IVIG and plasma exchange as preparations before thymectomy in myasthenia gravis patients. Acta Neurol Belg. (2017) 117:245–9. doi: 10.1007/s13760-016-0689-z
2. Ferdous Ara1 , Mohammad Sayeed Hassan2 , Md. Abdullah Yusuf3 , Sheikh Farjana Sonia4 , Kaniz Fatema5 , Sabrina Islam6 , Md. Badrul Alam7 , Quazi Deen Mohammad8 Therapeutic Plasma Exchange among Myasthenia Gravis Patients Attended at Referral Neurosciences Hospital in Bangladesh: A Single Centre Experience Journal of National Institute of Neurosciences Bangladesh January 2023, Vol. 9, No. 1, pp. 16-23
3. Claytor B, Cho S-M, Li Y. Myasthenic crisis. Muscle Nerve 2023; 68: 8–19.
4. Ipe TS, Davis AR, Raval JS. Therapeutic Plasma Exchange in Myasthenia Gravis: A Systematic Literature Review and Meta-Analysis of Comparative Evidence. Frontiers in neurology 2021; 12: 662856

058

"EXPLORING THE IMPACT OF VENTILATOR BUNDLES OF CARE ON PATIENT CARE IN EMERGENCY DEPARTMENT BY EMERGENCY CRITICAL CARE NURSES"

Afifah Mohamad, Maslina Yusak, Syahida Jamil, Nazili Mohd Rashdi, Lee Bee Kian, Tun Sholehah, Firdaus Ibrahim, Azma Haryaty Ahmad.

Corresponding author email: afifahmohd@gmail.com

Introduction: This study investigates the effectiveness of ventilator bundles of care in preventing ventilator-associated pneumonia (VAP) in the emergency department (ED) and its impact on patient morbidity.

Methodology: Post-basic nursing students in Advanced Diploma Emergency Care (ADEC) sub-speciality in Emergency Critical Care conducted a study in the ED of Hospital Raja Permaisuri Bainun. Fourteen ventilated patients were randomly selected, and the ventilator bundle of care, comprising head elevation, daily oral hygiene, sedation vacation, deep vein thrombosis prophylaxis, and stress ulcer prophylaxis, was applied from the first to the third day post-intubation. Patients' haemodynamic status were systematically monitored and analyzed throughout the study.

Results: The declining patterns observed in White Blood Cell count and respiratory rate indicate that daily bundle of care have made a notable impact. Simultaneously, Heart Rate displayed a gradual increase, correlating with factors like daily sedation withdrawal and delays in nutrition initiation. Conversely, no significant changes were observed in temperature and mean arterial pressure. The transient increase in White Blood Cell count on Day 2 may be attributed to delays in daily oral hygiene practices limited to the early morning, potentially influenced by factors such as staff shortages and a substantial patient workload.

Conclusion: This study highlights the pivotal role of timely ventilator bundle interventions in ED, with specific emphasis on oral hygiene, immediate head elevation and prophylaxis, were highlighted as crucial for achieving optimal haemodynamic and reducing risk of VAP.