



INTRODUCTION

Intussusception is a condition where the proximal segment of gastrointestinal tract (GIT) telescope into distal part. It is common in children age six months to 2 years old. It is one of the most prevalent paediatric intestinal and surgical emergencies in infants and young children with a peak age of 4–10 months. In many developing countries, the incidence of intussusception in infants less than one year of age is between 34 and 100 per 100,000 children in developed countries. It may pose a diagnostic challenge as the classic triad of colicky abdominal pain, vomiting and bloody stool may not present in all cases. Intussusception should be free from mortality if treat promptly. Contrast enema is both diagnostic and therapeutic but ultrasound is as good in term of diagnosis. So here we would like to highlight the use of Point of Care Ultrasound (POCUS) in helping to diagnose intussusception in District Hospital.

CASE REPORT

A healthy two years old boy presented with one day history of severe abdominal pain, vomiting and diarrhea but no bloody stool. He was otherwise a healthy child with no history recent trauma. Clinically he was afebrile, hemodynamically stable with good perfusion. His abdomen was soft, no palpable mass, bowel sound was heard and normal genitalia. However, he was intermittently crying non stop. A Point of care ultrasound (POCUS) done reveal a “target” and pseudo-kidney” sign which was later confirmed by formal ultrasound.



Transverse view (target sign/ doughnut sign)

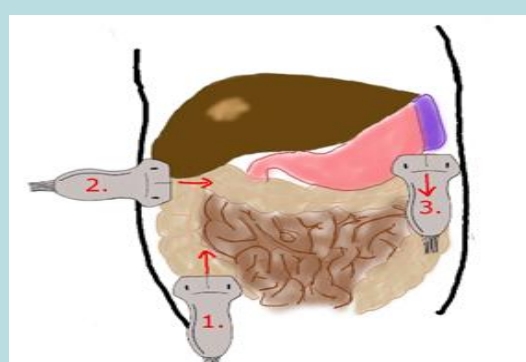


Longitudinal view (pseudokidney sign)

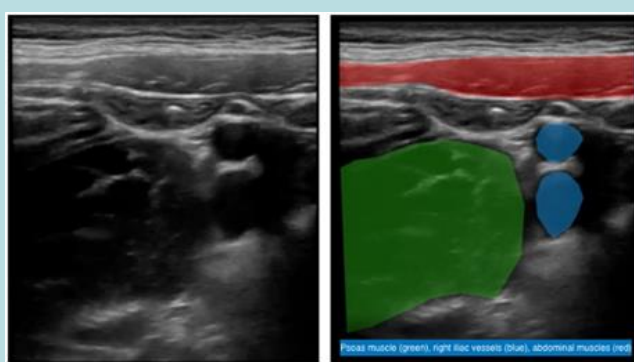
DISCUSSION

Intussusception is a common cause acute abdomen in young children and prompt diagnosis is crucial to avoid bowel ischemia and sepsis. It should be free from mortality if treated well and a timely diagnosis and treatment is utmost important since any delay may killed the patient life. The classic triad presentation were include crampy (intermittent or colicky) abdominal pain, vomiting and bloody stool. As the patient may not always present classically but instead with vague symptoms, clinician should be vigilant and maintain a high index of suspicion so as not to miss it. Most common type intussusception is ileocolic about 90 %. Other types are ileocecal, colocolic and ileocolic. Majority of intussusception are idiopathic. An anatomic lead point may occur in approximately 10% of intussusception. Upon obtaining the above images the diagnosis intussusception was suspected. In view of that, case was referred to tertiary centre immediately and formal ultrasound was confirmed colocolic intussusception with few mesenteric lymphadenopathy at the lead point. Ultrasound nowadays become an important assessment tools in Emergency & Trauma (ETD) and it has been proven to be sensitive (96.6–100%) and specific (88–100%) in diagnosing intussusception consistent with Canadian Emergency Ultrasound Society's core certification. In terms of ED length of stay (LOS), Kim et al. (2017) reported that after the introduction of an intussusception POCUS scanning protocol, the LOS decreased by >200 minutes. In order to perform the ultrasound, start in the right lower quadrant and trace the colon. Begin in right lower quadrant (RLQ), using a high frequency linear probe with the probe marker to patient's right. First, identify the anatomical landmarks in the (RLQ):

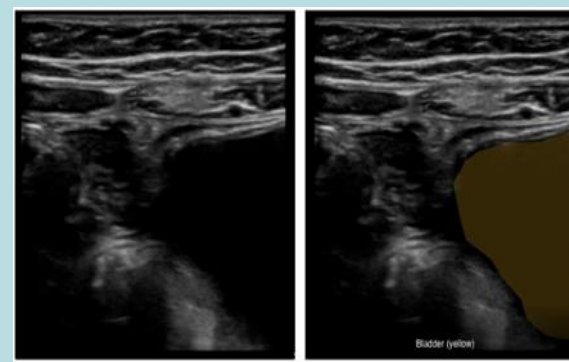
1. Psoas muscle (green) laterally
2. Right iliac vessels (blue)
3. Abdominal muscles (red)
4. Bladder (brown) medially



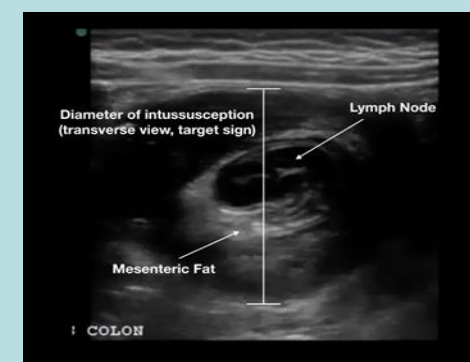
SEQUENTIAL ULTRASOUND TRANSDUCER
POSITIONING



ANTERIOR ABDOMEN (RLQ) VIEW



ANTERIOR ABDOMEN (RLQ) MEDIAL VIEW



TARGET SIGN IN TRANVERSE VIEW

High risk patient at risk of failed hydrostatic reduction should have greater awareness to decreased delays in time to the treatment like in our patient. Our patient did present with two out of three classic symptoms and with the POCUS findings suggestive of intussusception, we were able to expedite his transfer for further care in Malacca Hospital. Following failed attempt at hydrostatic reduction, he was later transfer to Hospital Tuanku Jaafar under the care of paediatric surgery. He was been discharge well after undergone surgical reduction.

CONCLUSION

Intussusception commonly occur in children. About 90% causes unknown cause. Intussusception is a medical emergency if not treated early and may result in death. Detecting intussusception by evaluating the clinical features or plain abdominal radiographs may be challenging. POCUS for detecting intussusception is relatively easy to learn and readily available in the ED. The usefulness of POCUS for detecting intussusception at early stage can make difference in patient life. POCUS is an integral part of assessment in ETD. In the hand of trained personnel, it will complement a through history and physical examination in formulating the diagnosis and subsequently can aid in rapid detection and shortening the treatment times. So always remember: Inspection, Palpation, Percussion, Auscultation and SONOGRAPHY (IPPAS).

AKNOWLEDGEMENT

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DECLARATION OF CONFLICT FOR AUTHOR

I have no conflict of interest

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- 2) Daneman A, Alton D. Intussusception. Issues and controversies related to diagnosis and reduction. Radiol Clin North Am. 1996;34(4):743–756. PMID 8677307.
- 3) POCUS in intussusception studies by Kim et al (2017)
- 4) Point-of-care ultrasound may be useful for detecting pediatric intussusception at an early stage (BMC Pediatrics volume 20, Article number: 155(2020)