



ACUTE ACALCULOUS CHOLECYSTITIS IN PLASMODIUM KNOWLESI INFECTION

Gan Chia Ling¹, Roziawati Che Abdul Aziz¹

¹Jabatan Kecemasan dan Trauma, Hospital Raja Perempuan Zainab II, Kota Bharu, Kelantan.

Introduction

Malaria infection has variable manifestations ranging from mild to severe illness with lethal complications. Gastrointestinal complications such as acute acalculous cholecystitis (AAC) is extremely rare. There are only a few case reports worldwide for such complication in which *Plasmodium falciparum* are commonly associated with. Abreu et al reported seven cases of AAC in severe *Plasmodium falciparum* malaria infection. Eleanor et al and Rosario et al each reported a case of AAC in falciparum malaria infection. Kuttiat et al reported a case of AAC in *Plasmodium vivax* infection in children. Khan et al and Maggi et al each reported a case of AAC complicated in mixed infection of *Plasmodium falciparum* and *vivax*. This case report is to highlight this rare malarial complication unusually occurred in *Plasmodium knowlesi* infection. To the best of our knowledge this is the first case of AAC occurring in a patient infected with *Plasmodium knowlesi*.

Case Report

A 34 year-old gentleman was referred from district hospital for acute abdomen. He presented with right hypochondriac pain for four days associated with jaundice and tea-colored urine. He also had high grade fever for 1 week associated with headache, chills and rigors. Further history revealed he had been hunting at a jungle in Kuala Pilah the week before. Examination revealed a septic looking patient with pallor, deep jaundice and tachypnoea. His blood pressure was 112/85 mmHg, supported with noradrenaline infusion as he was hypotensive although has been resuscitated with 30cc/kg fluid bolus. Pulse rate was 101bpm, temperature was 37 celcius, SpO₂ 97% under nasal prong. Lungs were clear bilaterally, but right hypochondriac region was tender and guarded with positive murphy sign and hepatomegaly. Blood results showed thrombocytopenia, anemia, acute kidney injury and elevated liver enzymes with obstructive picture. Urgent ultrasound abdomen reported thickened gall bladder wall without calculi and no focal liver lesion. In view of his hunting history, BFMP was done with 52102/0 *Plasmodium knowlesi* parasites per UL blood. He was treated with intravenous Artesunate and oral Doxycycline for severe malaria complicated with AAC. He was admitted in high dependency unit. Supportive treatment including dialysis were initiated from the beginning. He subsequently was intubated and mechanically ventilated for two days as he developed acute pulmonary edema on day 6, but he recovered well and fit to be discharged after twelve days of admission.

Blood investigation

Full Blood Count	WBC	HB	PLT
	4.9 x 10 ⁶ /uL	8.5 g/dl	56 x 10 ³ /uL

Liver Profile	ALP	AST	ALT
	362 U/L	85 U/L	73 U/L

Renal Profile	Urea	Sodium	Potassium	Creatinine
	31.6 mmol/L	129 mmol/L	5.3 mmol/L	556 mmol/L

Serum Bilirubin	Total	Direct	Indirect
	260 umol/L	168 umol/L	92 umol/L

Conclusion

AAC may occur in *Plasmodium knowlesi* infection. Increased awareness for this unusual complication combined with thorough history taking and physical examination with appropriate investigations are important in detecting this dreaded complication.

Discussion

AAC is commonly associated with severe illness such as trauma, burns, sepsis or major surgery. In malaria, the pathophysiology of AAC is multifactorial and not very well elucidated. Increased bile viscosity, gallbladder stasis and ischemia, sequestration of parasites in the microvasculature are among the mechanisms suggested for AAC pathogenesis. Most of the cases with AAC are usually associated with other features of severe malaria like in this case which are renal insufficiency and acute pulmonary oedema. According to our knowledge this is the first well documented case of AAC associated with severe malaria from Malaysia despite being an endemic area for malaria.

References

1. Abreu C. **Acute acalculous cholecystitis in malaria: a review of seven cases from an adult cohort.**
2. Rosario Sánchez. **Acalculous Cholecystitis Associated with *Plasmodium falciparum* Malaria.**
3. Eleanor F Harris. **Acalculous cholecystitis occurring in the context of *Plasmodium malariae* infection.**
4. Fahmi Yousef Khan **Acute acalculous cholecystitis complicating an imported case of mixed malaria caused by *Plasmodium falciparum* and *Plasmodium vivax*.**
5. Uptodate – www.uptodate.com, accessed on 18 August 2019.