

The fortuitous *Campylobacter fetus* subsp. *testudinum* bacteremia – A case report

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INTRODUCTION :

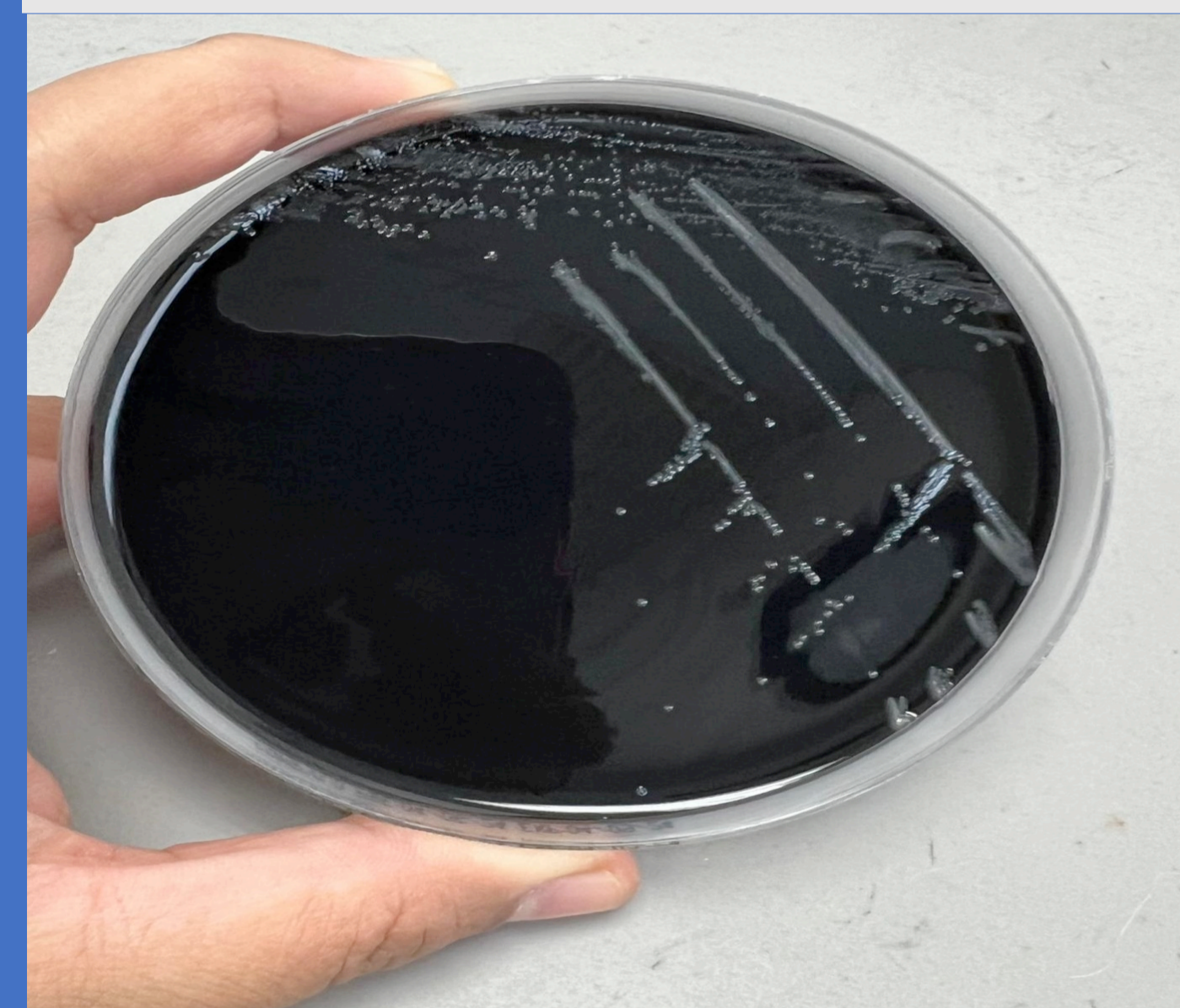
- *Campylobacter* species have been reported to cause foodborne bacterial gastroenteritis and it is estimated about 50% of the foodborne outbreaks in Southeast Asia. An extensive 20-year analysis of pediatric patients with diarrhoea at a healthcare facility in Kuala Lumpur revealed that *Campylobacter* species was one of the most frequently identified pathogens in stool specimens¹.
- *Campylobacter* is a microaerophilic, fastidious, gram-negative, motile bacteria with a typical characteristic of spiral or corkscrew-like appearance².
- *Campylobacter* often unforeseen and difficult to isolate due to its fastidious nature requiring special media- campy agar with microaerophilic environment³.
- *Campylobacter fetus* accounts for 1% of *Campylobacter* spp. infections, but prevalence of bacteremia and risk for death are high and fatality rate is highest among young children, elderly, and immunosuppressed individuals².
- **In Malaysia, limited data is available regarding the epidemiology of *Campylobacter* cases in humans. Here, we provide the initial report of a case involving *Campylobacter fetus* subsp. *testudinum* in an oncology patient in Malaysia, which resulted in a detrimental outcome.**

CASE REPORT:

A 48 years old woman, para 4, who was diagnosed with late stage cervical carcinoma presented with diarrhea and vomiting for 2 months duration associated with general malaise and pyrexia of unknown origin. She was a housewife, unemployed and no history of contact with any animal rodent at prior to onset of fever. She was admitted for empirical therapy piperacillin tazobactam and for investigation of the aetiological agent. **Her blood culture grew gram negative with “sea-gull” shape (Figure 1) highly suspicious of *Campylobacter*. After 48 hours of incubation the identification is still not known as the automated identification by VITEK[®]2 and MALDI TOF demonstrated low index of discrimination.** The isolate was sent to national referral laboratory, Institute of Medical Research (IMR) and was **confirmed as *Campylobacter fetus* subsp. *testudinum* using whole genome sequencing method.** Patient was treated with intravenous with poor clinical progress whereby she succumbed to the illness.



Figure 1 showed gram negative bacilli which resemble sea gull shape



Colony *Campylobacter fetus* on campy agar

DISCUSSION

- Our case is the first description infection by newly described *C. fetus* subsp. *testudinum* in Malaysia and in the South East Asia region.
- *Campylobacter* infection in human is underdetected and underreported due to the fastidious nature of the bacteria that may be missed by standard diagnostic laboratory protocol.
- Reptiles has been established as reservoir for *C. fetus* subsp. *testudinum*.⁴ However, animal contact was not established in this case.
- The patient passed away as a result of delayed administration of suitable antimicrobial therapy, and there has been reported that of *Campylobacter fetus* bacteremia linked to a considerable mortality rate.⁵
- James et al. noted that PCR-based detection demonstrated greater sensitivity in comparison to traditional culture methods. This difference can be attributed to factors such as the techniques and requirements of culture, exposure to antibiotics, as well as the detection capabilities of non-culture-based diagnostic methods for identifying low-level infections with uncertain clinical significance and viability.⁶

CONCLUSION

In our study, we have discovered the significance of promptly **notifying clinicians about presumptive *Campylobacter* spp in order to initiate appropriate antibiotic treatment early.** Since the organism requires special media and environment to grow, it may take some time for traditional methods of identification. Therefore, considering alternative methods such as whole genome sequencing or PCR for rapid identification is essential. Additionally, it is **important to emphasize the unique seagull shape of *Campylobacter* spp in gram stain analysis as this aids in the timely release of preliminary results.** We anticipate that this case report will have a positive impact on our microbiology team, leading to faster and accurate results for clinicians.

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