



FIRST HUMAN CASE OF *CALIDIFONTIBACTER INDICUS* PERITONITIS IN A PATIENT UNDERGOING CAPD: A CASE REPORT IN MALAYSIA

AUTHORS: YII LING LIOW¹, ANNIE ANAK MAXWELL¹, HABIB ABDUL HAKIM BIN ESA², NG SU YING (GINA)³

¹UNIT OF MICROBIOLOGY, DEPARTMENT OF PATHOLOGY, HOSPITAL SULTANAH AMINAH JOHOR BAHRU (HSAJB), 80100 JOHOR BAHRU, JOHOR, MALAYSIA
²UNIT OF BACTERIOLOGY, INFECTIOUS DISEASE RESEARCH CENTER (IDRC), INSTITUTE OF MEDICAL RESEARCH (IMR), NATIONAL INSTITUTES OF HEALTH (NIH)
³CLINICAL RESEARCH CENTER (CRC), HOSPITAL SULTANAH AMINAH JOHOR BAHRU (HSAJB), NATIONAL INSTITUTES OF HEALTH (NIH)

NMRR ID-25-02479-M2P

CAS-034

INTRODUCTION

- Calidifontibacter indicus* is a rare environmental bacterium from the *Dermacoccaceae* family, originally isolated from hot springs.
- Human pathogenicity has not previously been reported.
- This is the first documented case of *C. indicus* peritonitis in a continuous ambulatory peritoneal dialysis (CAPD) patient.

CASE PRESENTATION

- Patient:** 72-year-old Malay man, ESRF on CAPD, with comorbidities (T2DM, hypertension, CCF).
- Symptoms:** Abdominal discomfort, cloudy dialysate, but with no fever or systemic features.
- Examination:** Stable vitals, no peritoneal irritation.

INVESTIGATIONS

- Peritoneal fluid analysis:** Moderate pus cells, no organism on Gram stain.
- Peritoneal fluid culture:** Small convex white colonies on blood agar (Fig. 1) but no growth on MacConkey Agar or Sabouraud Dextrose Agar.
- Gram stain on culture:** Gram positive bacilli (Fig. 2)
- Biochemical Tests:** catalase & oxidase positive.
- Lab trends:** Initial WBC 370/mm³ in dialysate but improved with the right therapy. (Fig. 3 & Fig. 4)
- Antimicrobial susceptibility:** Low MIC (0.25-0.75 g/mL) for all tested antibiotics (no clinical breakpoints available) (Fig. 5)
- 16S RNA sequencing:** 99.93% similarity to *C. indicus*. (Fig. 6)

TREATMENTS AND OUTCOME

- Empirical:** IP ceftazidime + cefazolin, then fluconazole added. (Fig. 3)
- Stopped empirical treatment & switched to IP vancomycin** due to persistent symptoms. (Fig 4)
- Subsequently,** clinical improvement and normalization of dialysate cell count.
- Discharged well** after completing IP vancomycin.

CONCLUSION

- This case underscores the need for heightened awareness of rare pathogens in PD-related infections and supports the integration of molecular diagnostics into routine clinical practice.
- As global use of CAPD rises, reports like this may help clinicians recognize and manage unusual infections more effectively.

CHALLENGES

- Novel pathogen** → not in MALDI-ToF database.
- Diagnosis required 16S RNA sequencing (time-consuming)**

ACKNOWLEDGEMENT: We would like to thank the Director of Hospital Sultanah Aminah Johor Bahru (HSAJB) and the Director-General (DG) of Health, MOH Malaysia, for allowing us to publish this finding.



Fig. 1 : Blood agar yielded moderate amount of small whitish colonies , demonstrated a pure growth of *Calidifontibacter indicus*.

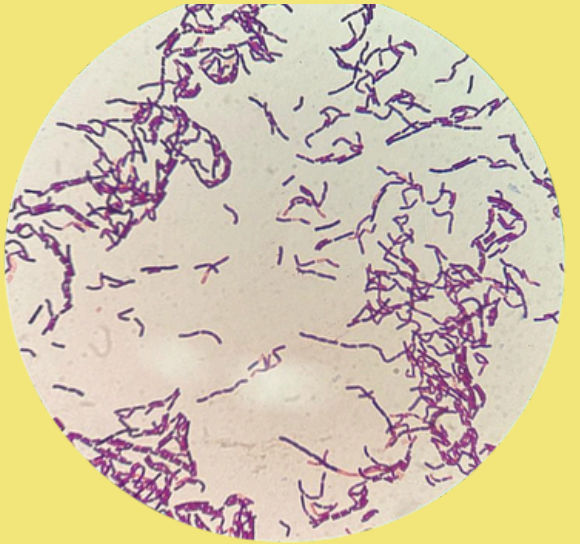
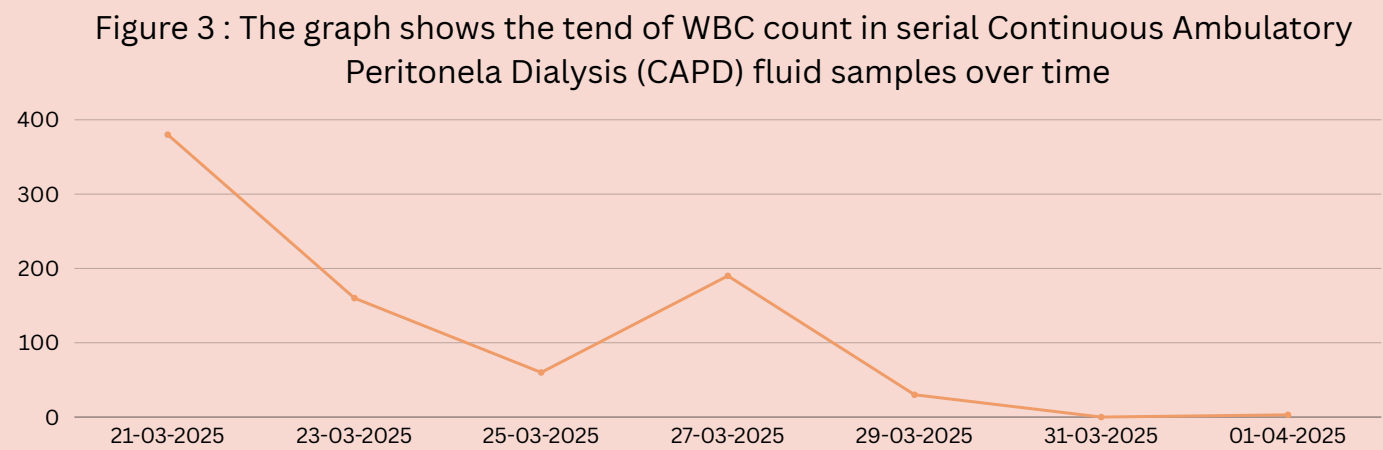


Fig. 2 : Gram stain shows Gram-positive bacilli (GPB) seen.



Blood investigations (Parameters/Reading)	20/3/2025	22/3/2025	27/3/2025	29/3/2025	3/4/2025
TWC	6.7		7		6.8
CRP	1.9				
PD fluid cell count	370	165	190	15	10

Initiation of IP Ceftazidime and IP Cefazolin T.fluconazole added Change to IP Vancomycin

Fig. 4 : Significant investigations done showed significant improvement after switched from ip Ceftazidime and cefazolin to IP vancomycin.

Test	Disk Content (µg)	Disk Diffusion (CLSI) Zone Size (mm)	Disk Diffusion (CLSI) Result	E-Test MIC (µg/mL)	E-Test Result
Vancomycin	30	n/a	N/A	0.25	N/A
Erythromycin	15	n/a	N/A	0.38	N/A
Penicillin	10	n/a	N/A	0.75	N/A

Reference: Disk Diffusion: CLSI / EUCAST (Latest Edition) MIC (µg/ml): E-Test

Comment/Remark : There are no clinical breakpoints for this species currently.

Fig. 5 : Antibiotic sensitivity testing performed in IMR but no clinical breakpoint.

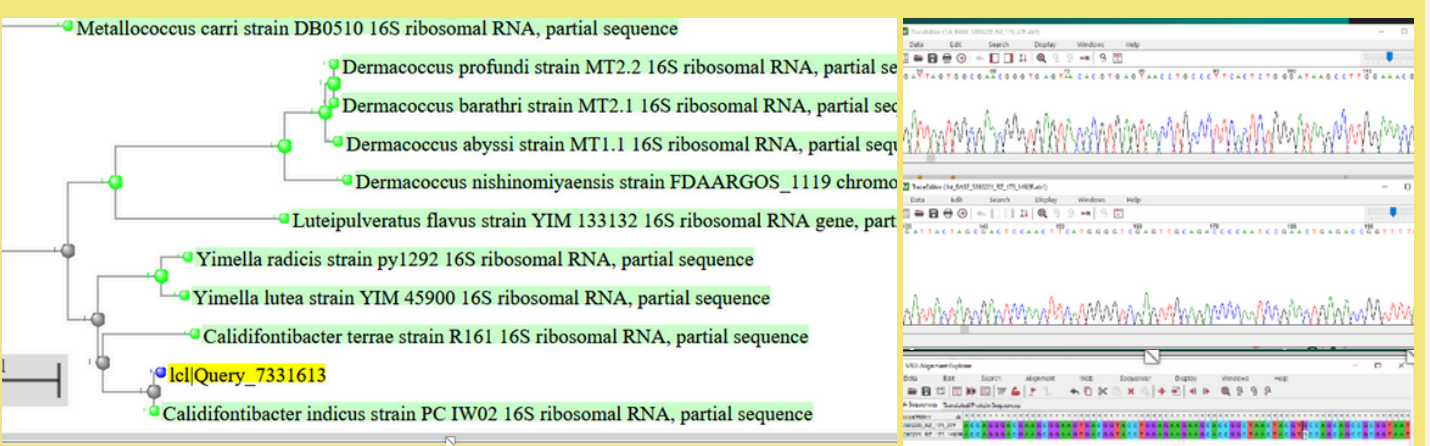


Fig 6: Multiple identification technique includes 16S rRNA (27F and 1492R) with Sanger sequencing, Alignment done using MEGA12 (ClusterW) which Nearly full length (~1351) fulfilled, and BLAST shown 99.93% similarity to *Calidifontibacter Indicus*., next best 98.08%.

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