



ORIGINAL RESEARCH PAPER

Microbiology

CANDIDA PARAPSILOSIS IN A CASE OF METASTATIC CARCINOMA OF GALL BLADDER WITH OBSTRUCTIVE BILIOPATHY

KEY WORDS: Candida parapsilosis, Biliary candidiasis, Carcinoma

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ABSTRACT

Isolation of candida species in bile is increasing in hospitalized immunocompromised patients. Use of therapeutic hepatobiliary procedures and stents in cancer patients presenting with obstructive jaundice has been found associated with infectious complications. Positive bile culture growing candida should not be ignored as a mere contaminant, rather a thought should be given for its clinical significance especially while prescribing treatment for the immunosuppressed patient with recurrent cholangitis or receiving long term antibiotic therapy. In this study, we report a case of metastatic carcinoma of gallbladder with cholangitis where Candida parapsilosis was isolated along with other previous bacterial infection in bile.

1. INTRODUCTION

Infections caused by *Candida* species are increasing in frequency and its significance has been seen more commonly in hospitalized patients.¹ Patients receiving chemotherapy, immunosuppressive agents, corticosteroids, long term antibiotic therapy, and parenteral hyperalimentation are at increased risk of infection with candida species.¹ Probably with the use of procedures such as percutaneous trans-hepatic biliary drainage and endoscopic biliary stents the risk of fungal infection of biliary tract is increasing more often nowadays.²

Despite the emerging awareness regarding biliary candidiasis, its clinical relevance and potential risk factors still remains debateable. Isolation of candida species from biliary samples might not always be a pathogen, it could be a colonizer or a contaminant too.³

As a part of invasive candidiasis, fungal cholangitis has become the leading cause of sepsis in patients with loco regional malignancies.³ Biliary tract infections caused by candida and other fungal species leading to obstructive jaundice have increasingly been identified lately.⁴

2. Case history

A 63 years old male known case of metastatic carcinoma of gallbladder on palliative management was admitted to the hospital on 25th of September 2022 with complaints of obstructive jaundice since 1 month. Antibiotic cefixime was started and subsequently cultures and other investigations were sent. In view of rising jaundice, on subsequent day an Endoscopic retrograde cholangio-pancreatography was done which showed cut-off at common hepatic duct level following which self-expandable metallic stent was placed in the right hepatic duct.

Patient complained of pain post procedure after which a CT scan of abdomen was done which showed peri-pancreatic fat stranding and ascites with infiltration into the pancreatic head by the mass. Symptomatic treatment was given and the patient was discharged in stable condition after 5 days.

After a month on 29th of October patient complained of high-grade fever with chills and rigors associated with decreased

oral intake, reduced urine output and multiple episodes of vomiting. In view of above complaints patient was again admitted, investigations were sent and was started on piperacillin and tazobactam, antipyretics, intravenous fluids, and other supportive treatment. On the next day patient was shifted to Intensive Care Unit as he had altered sensorium with decreased urine output.

Due to multiple urethral strictures with obstructive uropathy, a cystoscopy guided urethral catheterisation was done. Blood culture grew *E. coli* and *Pseudomonas aeruginosa* both sensitive to meropenem after which antibiotic was switched over to meropenem.

With the rise in fever and rising titres of bilirubin, Percutaneous Transhepatic Biliary Drainage insertion was done on 31st October. Procedure remained uneventful and aspirated bile was sent for culture. Bile culture showed growth of *Klebsiella pneumoniae* and *Pseudomonas aeruginosa* which were both sensitive to Meropenem and hence antibiotics were continued.

Drain output was monitored. Patient gradually developed ascites and hence a ultrasound guided insertion of a peritoneal drain was also done in the Intensive Care Unit and Ascitic fluid was sent for analysis. Ascitic fluid revealed low protein and negative for malignant cells. Patient's sensorium improved marginally, creatinine and urine output also improved and Ryles Tube feeding was continued.

However, patient had repeated spikes of fever, counts showed an increasing trend and procalcitonin level (3.04 ng/ml) was also raised. Hence all cultures were repeated. Initial reports of the Blood and Urine culture in 24 hours showed no growth. Inj. Amikacin was added to meropenem according to culture sensitivity. However, patient again had increased levels of creatinine and sodium and urine output was gradually decreasing.

Repeated bile culture grew *Candida parapsilosis* (Fig.1). This finding was confirmed by repeat sample collection and processing to rule out contamination. The patient was started on inj. caspofungin. Patient was further managed symptomatically. Patient gradually recovered and was discharged on 10th Nov 2022.

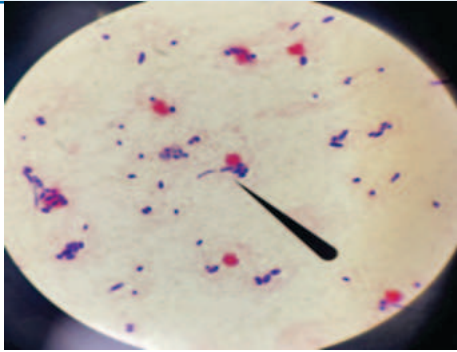


Fig.1 *Candida parapsilosis*

3. DISCUSSION

Table 1: Other case studies with biliary candidiasis.

S. No.	Author year	Type of study	Candida species isolated	Immuno-suppression	Indication for bile culture	Treatment given or not	prognosis
1.	Lai chung et al. 2005 10	Case report	Candida albicans and C. glabrata	No	cholecystitis with gallbladder empyema, Common Bile Duct dilatation	Intravenous Amphotericin B followed by fluconazole	Good
2.	Ballal M et al. 2012 1	Case report	Candida tropicalis	Known case of Cholangio-carcinoma on immuno-suppression	Cholangitis	supportive	Bad
3.	Bian W et al. 2018 7	Case report	Candida albicans	No	Cholecystectomy. markedly dilated pancreatic and biliary duct upstream	Fluconazole 450mg qd	Good
4.	Domagk D et al. 2006 4	Case series [7 cases]	Candida spp.	In few	Morphological changes in peripheral bile ducts detected during Endoscopic Retrograde Cholangiopancreatogr aphy.	anti-infectious drugs and endoscopic therapy such as bile duct drainage, lavage, or debridement	Good in most of the cases. Poor prognosis in some

In patients with carcinoma and undergoing biliary drainage procedures the infectious complications are very common.¹ The pathogenesis and source of infection is not yet certain but may possibly be due to: ascending infection (from the midgut or hindgut) or due to hematogenous (fungemia and sepsis) route or via instrumentation (Endoscopic Retrograde Cholangiopancreatography/stenting). In cases where there is a pre-existing damage to the biliary tract, e.g., Common Bile Duct stenosis (benign or malignant), fungal species have an invasion point.¹

To conclude, *Candida* species can be isolated from bile aspirate and could be pathogenic and should not be ignored as mere contamination. During endoscopic examination physicians should screen for biliary tract candidiasis, more specifically in immunocompromised patients and patients who are on long term antibiotic therapy.^{1,11}

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Consent of patient: Informed and Written consent was taken.

Key Message: *Candida* species can be isolated from bile aspirate and could be pathogenic and therefore, should not be ignored as a mere contaminant.

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Biliary candidiasis is a rare disease, although its incidence has been increasing in recent years³ (lenz P et al.). Most of the cases which have been reported are diagnosed in patients with underlying malignancy, immunosuppressive drugs, diabetes mellitus and patients undergoing surgeries.

Similar to our case Ballal M *et al.*¹, also reported *Candida tropicalis* in a case of cholangiocarcinoma with cholangitis secondary to obstructive jaundice.

In this case report too, initially *Klebsiella pneumonia* was identified in blood and bile cultures (after Endoscopic retrograde cholangio pancreatography procedure was done to drain the infected bile and palliate the obstructive jaundice) and then *Candida tropicalis* two months after the patient was discharged. Similar to our study other studies have also been done which are tabulated in table 1.

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