OERSKOVIA TURBATA AND MYROIDES SPECIES: RARE ISOLATES FROM A CASE OF ACALCULUS CHOLECYSTITIS

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Abstract

Here we report a case of acalculus cholecystitis, which presented with features of obstructive jaundice of one-week duration. The patient underwent cholecystectomy and bile grew a mixed culture of Oerskovia turbata and Myroides spp. Being a rare isolate, characteristic features of the former are described in this report. The patient recovered without any complication.

Key words: Acalculus cholecystitis, Oerskovia turbata, Myroides species

Actinomycetes belonging to genus Oerskovia are characterized by the presence of branched substrate hyphae which break-up into flagellated motile elements and by a lack of aerial mycelium.1,2 The genus is composed of only one species, O. turbata. O. xanthiniolytica, which was earlier described as a species, is relocated into a new genus, namely Cellulosimicrobium cellulans. Both of these are soil inhabitants and rarely cause human infections. In addition there are numerous Oerskovia like Actinomycetes, isolated from soil and other sources, that are non-motile. These are referred to as ‘NMO’ (non motile Oerskovia like strains).1 Most of the reported cases of Oerskovia infections have occurred in immunocompromised patients and/or were associated with foreign bodies.3-5

Myroides spp. was formerly classified as Flavobacterium odoratum and comprises of two distinct species namely M. odoratus and M. odoratimimus. They form yellow-pigmented colonies with a characteristic fruity odour. They are asscharolytic gram-negative rods and are oxidase, catalase, urease and gelatinase-positive. There are no routine tests for their differentiation and their differences are confined to assimilation tests and cellular fatty acids.6

Here we report a case of acalculus cholecystitis in whom Oerskovia turbata and Myroides species were cultured from bile.

Case Report

A 76-year-old male patient presented with features of obstructive jaundice of a week’s duration. Ultrasound scan revealed a dilated biliary system and pancreatic duct. Endoscopic retrograde cholangio pancreatography (ERCP) was attempted twice but common biliary duct (CBD) could not be dilated. He underwent cholecystectomy, CBD exploration and hepaticojejunostomy. Bile was sent for culture. His postoperative course was uneventful. Histopathology of the gall bladder showed an acute on chronic inflammation. There was no calculus. He was a known case of chronic obstructive airway disease that was treated with a Sidha medication (a root powder) for six to seven months.

A Gram stain of the bile specimen showed pus cells and abundant gram positive and gram-negative bacilli. Aerobic incubation yielded heavy growth of Myroides species in pure culture. Identification was done according to standard procedure.6 Anaerobic culture showed abundant growth of bright yellow pigmented (Fig. 1), 2 mm, high-domed colonies with smooth shiny surface after 48h of incubation which on subsequent subcultures grew aerobically. Colonies showed a characteristic filamentous fringe (Fig. 2) on further incubation.

Gram stain revealed gram-positive long filaments, which broke down into rod shaped motile elements. No aerial hyphae were formed. The organism did not grow on Sabouraud dextrose agar. Bacterial identification was done

![Figure 1: Growth of Oerkovia turbata on sheep blood agar plate after 48 hours showing yellow pigmented colonies](image-url)
as per standard techniques. The isolate was also sent to Department of Clinical Microbiology, CMC Vellore, where it was confirmed as Oerskovia. The organism was non-acid-fast, catalase-positive when grown aerobically and reduced nitrate. It produced acid in glucose, sucrose, xylose and salicin and did not produce acid in lactose, maltose, mannitol, dulcitol, adonitol, rhamnose, arabinose and sorbitol. It liquefied gelatin, hydrolysed esculin and casein and was MR positive and VP negative. It was cellulase negative, which differentiated it from Cellulomonas species and did not hydrolyse xanthine, which differentiated it from Cellulosimicrobium cellulans (earlier designated O. xanthineolytica) With these characteristics, the isolate was identified as Oerskovia turbata.

Discussion

Oerskovia and Myroides spp. are found in the environment and form yellow-pigmented colonies. Both are producers of proteinases, which has the propensity to be destructive to host cells and tissues. Oerskovia spp. has been isolated from various clinical specimens such as blood, cerebrospinal fluid, pus, sputum, urine and liver aspirate. It is described as an opportunistic pathogen.

Infected bile is usually polymicrobial and a single species is recovered in only one-third of patients. In a microbiologic study, 46% of patients with acute cholecystitis had positive bile cultures. Primary infection with Salmonella and Campylobacter are known to cause acalculus cholecystitis. Bacteria commonly isolated from bile are Escherichia coli, Klebsiella spp, Enterobacter spp. and anaerobic bacteria (most frequently Bacteroides, Fusobacterium and Clostridium). Enterococcus faecalis is also isolated but is usually associated with other organisms.

The exact source of these bacteria could not be confirmed, but it is known that the patient was on an oral medication of a root powder for a period of six to seven months before he developed features of obstructive jaundice.

Thus in this case, we see that Myroides spp, a gram negative bacilli and a strict aerobe was growing in tandem in gall bladder with Oerskovia spp, which is a gram positive, facultative anaerobic bacilli. It is difficult to deny their clinical significance since both these bacteria produce proteinases, which might have contributed to the genesis of acalculus cholecystitis in this patient.

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References


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