Liver abscess due to *Neisseria sicca* after repeated transcatheter arterial embolization

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*Neisseria sicca* is rarely associated with clinical infections and to the authors’ knowledge this organism has not been reported as a causative agent of infected biloma (liver abscess). A case of a diabetic man with infected biloma due to *N. sicca* after repeated transcatheter arterial embolization for hepatocellular carcinoma is reported. The patient was successfully treated with intravenous cefotaxime and metronidazole. The biochemical profile and 16S rRNA gene partial sequencing results of the isolate were in agreement with those of *N. sicca*.

**Introduction**

*Neisseria sicca* is a slow-growing, fastidious Gram-negative diplococcus that is a common inhabitant of the oral cavity and is only rarely associated with clinical infections, including endocarditis, peritonitis, meningitis, pneumonia, urethritis, Bartholin’s gland abscess, septic arthritis, discitis, osteomyelitis and spondylitis (Geisler & Markovitz, 1998; Johnson, 1983). To our knowledge, this organism has not been reported as a causative agent of infected biloma (liver abscess). Here we report the case of a diabetic man with liver abscess due to *N. sicca* after repeated transcatheter arterial embolization (TAE) for hepatocellular carcinoma.

**Case report**

A 62-year-old man was regularly followed-up at the outpatient department of the National Taiwan University Hospital due to diabetes mellitus, cryptogenic liver cirrhosis and multiple hepatocellular carcinoma. He developed fever (38°C) and chills 12 weeks after undergoing a fifth TAE. Physical examinations revealed unre-markable knocking pain over the right upper abdomen. Contrast-enhanced magnetic resonance imaging disclosed a 4.9 cm irregular and homogeneously hyperintense lesion on T2-weighted images at the right hepatic lobe consistent with biloma (Fig. 1). Echo-guided aspiration was performed and a Gram-stained smear of the aspirated pus showed numerous Gram-negative diplococci. Intravenous cefotaxime (1 g every 12 h) and metronidazole (500 mg every 8 h) were started. Fever subsided on the third hospital day. Culture of the aspirated pus yielded *N. sicca*.

Intravenous antibiotics were given for 2 weeks followed by oral cefixime (500 mg every 12 h) for an additional 2 weeks. Aspiration of the hepatic lesion was performed again on the 13th hospital day and culture of the aspirate did not grow any organism. The patient remained well and follow-up abdominal sonography 4 months after the completion of antibiotic treatment revealed no evidence of residual biloma.

The biochemical profile of the isolate produced by the VITEK *Neisseria/Haemophilus* Identification (NHI) Card (bioMérieux Vitek) was in agreement with that of *N. sicca* (98% identity). Further identification of the isolate was performed by 16S rRNA gene partial sequencing using a pair of universal primers, DG74 (5′-AGGAGGTGATCC-AACCGCA-3′) and RW01 (5′-AACTGGAGGAAGGTG-GGGAT-3′), as previously described (Hsueh et al., 2000). The sequences were compared with published sequences in the GenBank database using the BLASTN algorithm. The closest match observed was obtained with *N. sicca* [GenBank accession no. AJ239293, 99% (1345/1355) identity]. A chromogenic cephalosporin assay (cefinate disk; BBL Microbiology Systems) of the isolate was negative for β-lactamase activity.

**Discussion**

Biloma, an encapsulated bile collection outside the biliary tree, can occur as a complication of TAE (Chen et al., 2005). Enteric bacteria are generally considered the main source of causative agents in post-TAE hepatobiliary infection, among which *Escherichia coli* is the most frequently reported (Ong et al., 2004). The incidence of biloma after TAE has been reported to be around 0.8–1.1% (Chen et al., 2005). Frequent TAE therapy, especially five
or more courses, might be the risk factor for post-TAE biloma (Chen et al., 1999). This patient had undergone TAE five times before developing the complication of recurrent biloma formation. Ischaemic damage to the peribiliary plexus resulting from TAE may have provided a route for translocation of *N. sicca* from the gastrointestinal tract (Johnson, 1983).

To our knowledge, this is the first reported case of infected biloma (liver abscess) caused by *N. sicca* after repeated TAE for hepatocellular carcinoma. Although *E. coli* is the most common pathogen in post-TAE hepatobiliary infection, this case indicates that *N. sicca*-infected biloma should be included in the list of differential diagnoses when a patient with a history of repeated TAE procedures presents with unexplained fever.

**References**


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**Fig. 1.** Magnetic resonance image of the abdomen of a patient with infected biloma due to *Neisseria sicca* reveals a hepatic partial infarction and one large patch with intense marginal enhancement in S7. The patch is heterogeneously intense on T1-weighted images (a; arrow) and homogeneously hyperintense on T2-weighted images (b; arrowhead).