First report of vaginal infection caused by Enterococcus raffinosus

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The authors have reported the first case of vaginal infection caused by Enterococcus raffinosus. The latter is a rarely identified species, but some of the infections described in the literature should direct some attention to this, often opportunistic pathogen, and its emerging multidrug resistance.

Discussion


Enterococcus species are one of the main causes of nosocomial infections. Although Enterococcus faecalis and Enterococcus faecium represent 90% of clinical isolates, the incidence of enterococcal species other than E. faecalis and E. faecium is increasing (Prakash et al., 2005). In particular, uncommonly E. raffinosus has been isolated from hospitalized patients. E. raffinosus is a facultative, motile or non-motile, non-encapsulated, non-sporulating organism. The cells are Gram-positive and are arranged singly, in pairs or short chains. On blood agar with 5% sheep blood, colonies are smooth, grey, \( \alpha \)-haemolytic or non-haemolytic and \( \leq 1 \) mm in diameter. The latter is a rarely identified species, but some of the infections described in the literature should direct some attention to this, often opportunistic pathogen, and its emerging multidrug resistance.
In diameter. This species is characterized by the presence of pyrrolidonylarylmidase and leucine aminopeptidase activities, hydrolysis of asaccharin and utilization of mannitol, sorbitol, raffinose, sucrose and L-arabinose, and the absence of catalase activity. Further, *E. raffinosus* occasionally presents Lancefield Group D antigen (Facklam & Collins, 1989; Freyaldenhoven *et al.*, 2005; Sandoe *et al.*, 2001).

The species *E. raffinosus* was recognized in 1989, when the bacterium was distinguished from the phenotypically similar *Enterococcus avium* by the ability of the former to utilize raffinose. Misidentification is possible by using API 20 Strep and API 32 Strep (bioMérieux), as *E. raffinosus* is not included in the database for these products. Instead, VITEK 2, Rapid ID 32 Strep and the BD Phoenix system include this species in the Gram-positive identification database (Freyaldenhoven *et al.*, 2005; Grayson *et al.*, 1991; Sandoe *et al.*, 2001).

*E. raffinosus* is associated with urinary tract infections, wounds, ulcers and plagues infections, intra-abdominal and inguinal abscesses, Bartolin gland abscesses, biliary and peritoneal infections, vertebral osteomyelitis, endocarditis and bacteraemia (Chirurgi *et al.*, 1991; Sandoe *et al.*, 2001). A case of haematoma infection has been reported recently (Freyaldenhoven *et al.*, 2005). Isolation of *E. raffinosus* is usually related to long-term hospitalization, antibiotic prophylaxis and therapies, urinary catheterization and surgical procedures (Chirurgi *et al.*, 1991; Prakash *et al.*, 2005; Sandoe *et al.*, 2001). It is difficult to provide a standard susceptibility pattern for *E. raffinosus*, and its emerging multidrug resistance is increasing in importance (Gordon *et al.*, 1992), as resistance to penicillin, aminoglycosides, fluoroquinolones, carbapenems and glycopeptides has been described in the literature. In particular, resistance to penicillin is mediated mostly by mutations in penicillin-binding proteins. Further, gentamicin resistance is often associated with resistance to erythromycin, tetracycline and minocycline (Chirurgi *et al.*, 1991; Grayson *et al.*, 1989; Sapico *et al.*, 1996; Tanimoto *et al.*, 2006; Wilke *et al.*, 1997).

To date, little has been published concerning *E. raffinosus*. In the case described here, the patient had received parenteral piperacillin–tazobactam, imipenem and vancomycin during the first month of admission to hospital, due to the onset of bacteraemia caused by *Escherichia coli*, and of a catheter-related *Staphylococcus epidermidis* bloodstream infection (data not shown). Other factors or underlying diseases able to increase the risk of acquiring such an enterococcal infection were not present. *E. raffinosus* is known to only inhabit the oropharynx of domestic cats, as part of the commensal flora; nothing else is known about its natural habitat (Sandoe *et al.*, 2001). It is not known whether the patient in this case kept any pets.

To our knowledge, this report describes the first case of vaginitis caused by *E. raffinosus*, confirming the role of this organism as a cause of nosocomial infections. Further, it focuses on the emerging occurrence of antimicrobial resistance in this uncommon species. Hence, the authors re-emphasize the importance of the implementation of infection control measures, in order to limit the nosocomial spread of unusual and atypical bacteria, and the emergence of multidrug resistance among them.

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**References**


