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Chorioamnionitis due to *Lactococcus lactis cremoris*: A case report



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ABSTRACT

Lactococcus lactis cremoris is rarely involved in human pathology. A thirty two-year old pregnant woman with premature rupture of membrane history presented with chorioamnionitis due to *L. lactis cremoris*. She underwent an emergency caesarian section and was treated with antibiotics including the association of amoxicillin and clavulanic acid. She was completely recovered. This is the first case to our knowledge of chorioamnionitis due to this organism.

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1. Introduction

Lactococcus lactis is a Gram positive cocci generally used in food industry [1]. It has often been considered non-pathogenic for humans, however, during the last two decades, some isolated cases of microbiologically documented infections have been described worldwide [2]. We report the first case to our knowledge of chorioamnionitis due to *L. lactis cremoris*.

A thirty two-year-old pregnant woman was admitted to the surgical unit of the Obstetrics and Gynaecology department at the University Hospital Farhat Hached, Sousse for chorioamnionitis suspicion.

The history of disease dates back to April 18, 2015.

2. Case Report

The patient Gravida 3, para 2, had no special medical history except for premature rupture of membranes during her prior pregnancies. She denied exposure to unpasteurized dairy products or contact with cattle. She was admitted for sudden vaginal discharge; the fluid appeared clear with no noticeable odour. Premature rupture of membranes at 34 weeks of gestation was diagnosed. Amoxicillin 1 g three times daily for six days was given. Expectant management was used with surveillance and decision to induce delivery at 36 weeks of gestation if there is no foetal or maternal complications.

She was then readmitted two weeks later for induction of labour. Her physical examination revealed a temperature of 38.8 °C with no haemodynamic instability or pelvic pain. A biological inflammatory syndrome was noticed with 14,200 white blood cells/mm³ and electronic foetal heart monitoring showed decelerations. Diagnosis suspected

were chorioamnionitis and acute fetal distress [3] so the patient underwent an emergency caesarean section and was delivered of an eutrophic live male infant weighing 3 kg130, Apgar score 9/10.

The placenta was biopsied under sterile conditions and a tissue sample was sent to the Microbiology Laboratory. The piece was added 2 mL of BHI (Brain Heart Infusion) and vortexed for 3 min. The homogenates were seeded on chocolate agar with Isovitalex and CNA agar (blood agar with nalidixic acid and colistin). After 24 h of aerobic incubation at 37 °C, pure culture made of small translucent non-hemolytic colonies was found on both types of agar. The organism was a Gram positive catalase negative cocci. For the species identification, the biological test based on Api 20 Strep kit (BioMérieux, France) was used and *L. lactis cremoris* was isolated. Antibiotic susceptibility was performed by the disc diffusion method on Mueller Hinton agar according to the recommendations of the Antibiogram Committee of the French Society for Microbiology. The germ was susceptible to penicillin, ampicillin, cefotaxime, vancomycin, teicoplanin, erythromycin, lincomycin, pristinamycin, levofloxacin, fosfomicin, chloramphenicol, cotrimoxazole and rifampicin. The isolate had low level resistance to kanamycin, gentamicin and streptomycin.

The postoperative course was uneventful for mother and child. The patient was treated with amoxicillin and clavulanic acid and became afebrile. She was discharged three days post-partum.

3. Discussion

L. lactis cremoris was once classified as a Lancefield's group N *Streptococcus* then transferred to the genus *Lactococcus* in 1985 [4]. It is a catalase negative aerotolerant anaerobic homofermentative Gram positive cocci. It is a commensal of cattle mucocutaneous surfaces and it is used in food industry in milk product fermentation and some cheese production like cheddar and camembert [1–5].

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It's rarely involved in human infections but isolated cases have been reported worldwide: five endocarditis [2–6], necrotizing pneumonitis and empyema [7], septic arthritis [2], septicaemia [2], four liver abscess [2,5,8], cerebral abscess [9], deep neck infection [10], canaliculitis [2], cholangitis [2] and three peritonitis in peritoneal dialysis patients [11].

Exposure to unpasteurized dairy products and immunodepression are thought to be the risk factors for *L. lactis* infections but they are not always found in medical history [2]. Unlike other bacteria used in food industry, *L. lactis cremoris* is able to survive in the digestive tract [5]. Bacterial translocation during digestion would be the mechanism of infection [1]. The possibility of isolating *L. lactis* from human mucocutaneous surfaces [5] and the premature rupture of membranes could explain the mechanism of infection in our case.

Adding to specific treatment, infections reported generally responded well to antibiotics [2]. The described lactococci were susceptible to beta-lactams and other antibiotic families including aminoglycosides and glycopeptides. This germ is rarely involved in human pathology, and this could explain their escape from antibiotic selective pressure.

In conclusion, we should reconsider *L. lactis cremoris* pathogenicity as it is isolated from monomorphic cultures coming from different infection sites generally in patients with underlying pathology. This germ is usually susceptible to antibiotics but monitoring the emergence of resistance mechanisms is still required.

Conflict of Interest

None.

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