

Septic arthritis caused by *Peptostreptococcus asaccharolyticus*

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We present a case of a 57-year-old woman with a one-month history of right knee mechanical rhythm pain and progressive swelling. She denied local trauma, previous infection, other articular complaints (peripheral or axial), fever or weight loss. Two months earlier she was submitted to a dental procedure (tartar removal).

Due to a 13-year history of peripheral spondyloarthritis she was being treated with sulfasalazine 2g/day and naproxen 500mg 2bid.

Physical examination revealed erythema, swelling, tenderness to palpation, warmth to touch, and pain upon movement, with limitation of knee motion. There was no fever. Right knee arthrocentesis was performed and 45 ml of opaque synovial fluid were aspirated. Cytological examination revealed 11700 leucocytes/uL (85% neutrophils) and aerobic culture did not isolate any microorganism. Anaerobic culture was positive for *Peptostreptococcus asaccharolyticus*.

Laboratory workup showed an erythrocyte sedimentation rate (ESR) of 77 mm/h (reference value (r.v.) < 20mm/h), C-reactive protein 5.5 mg/dL (r.v. < 0.5 mg/dL), hemoglobin 10.7 g/dL (r.v. 12.0-15.0 g/dL), and leukocytes $5.8 \times 10^9/L$ (r.v. $4.0-10.0 \times 10^9/L$).

In order to exclude a synovial fluid contamination, arthrocentesis was repeated and *Peptostreptococcus asaccharolyticus* was again identified in anaerobic cultures.

To exclude distance infection focus that could be involved in bacteriemic spreading to knee, she was observed by a dentist and a gynecologist - no abscesses or focal infections were found. Hemocultures were negative and no vegetations were found in echocardiogram.

Right knee magnetic resonance image revealed features of knee osteoarthritis, rupture of internal meniscus and external plate medullar tibia oedema (Figure 1).

According to antibiogram test, antibiotic treatment was initiated with amoxicillin in combination with clavulanic acid 875/125 mg 12/12h for six weeks.

At the end of the treatment, she was clinical asymptomatic and had favourable analytical evolution.

DISCUSSION

We report a case of a septic arthritis of the knee caused by *Peptostreptococcus asaccharolyticus* in a patient with previous history of peripheral spondyloarthritis. To our knowledge this is the first reported case of septic arthritis caused by this microorganism.

The gram-positive anaerobic coccus *Peptostreptococcus spp* are one of the most frequently identify recovered species from radicular dentin in periodontal disease¹⁻³. They are occasionally isolated from other oral infec-



FIGURE 1. Right knee MRI: external plate medullar tibia oedema and osteoarthritis features

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tions, such as periapical abscesses⁴ and peritonsillar infections⁵, or female genital tract infections⁶.

Peptostreptococcus spp are part of human's normal skin flora¹ and has not been associated with any particular disease process. However, it has been isolated in pediatric intracranial abscesses, diabetic foot infections, bacteraemia, peritonsillar abscess and pelvic infections⁶. It has been occasionally reported as the cause of prosthetic joints infections⁷⁻⁹.

We repeated the arthrocentesis to exclude contamination of synovial fluid. Differential diagnosis with flare of peripheral spondylarthritis was considered because of the usual knee joint involvement, elevation of ESR and the inflammatory characteristics of the synovial fluid.

Peptostreptococcus ssp are difficult to isolate due to its slow growth and requirement special culture environments.

In this case a previous periodontal/oral infection or colonization by *Peptostreptococcus asaccharolyticus* could have been present, making transitory bacteremia with hematogenous spreading, colonization and infection on a structurally altered knee. Oral examination did not demonstrate any periodontal abscess that could be the focus of infection, although we could argue that this examination was only performed 2 months after the dental procedure.

Peripheral spondylarthritis, knee osteoarthritis and rupture of internal meniscus, are known risk factors for conditions that favour the colonization and growth of pathogens microorganisms¹⁰.

This case report raises the awareness for septic arthritis by slow growth microorganisms such *Peptostreptococcus spp*, in particular in patients with previous oral or gynecological infections, when synovial fluid cellular count is suggestive of infection and when other causes of septic arthritis were excluded.

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REFERENCES

1. Murdoch DA. Gram-positive anaerobic cocci. Clin Microbiol Rev. 1998;11:81-120.
2. Given R, Jousimies-Somer H, Marina M, Borenstein L, Shah H, Finegold SM. A retrospective review of cases of anaerobic empyema and update of bacteriology. Clin Infect Dis 1995; 2: 224-229.
3. Giuliana G, Ammatuna P, Pizzo G, Capone F, D'Angelo M. Occurrence of invading bacteria in radicular dentin of periodontally diseased teeth: microbiological findings. J Clin Periodontol 1997; 24: 478-485.
4. Williams BL, McCann GF, Schoenknecht FD. Bacteriology of dental abscesses of endodontic origin. J Clin Microbiol. 1983; 18: 770-774.
5. Mitchelmore IJ, Prior AJ, Montgomery PQ, Tabaqchali S. Microbiological features and pathogenesis of peritonsillar abscesses. Eur J Clin Microbiol Infect Dis 1995. 14: 870-877.
6. Murdoch DA, Mitchelmore IJ, Tabaqchali S. The clinical importance of gram-positive anaerobic cocci isolated at St Bartholomew's Hospital, London, in 1987. J Med Microbiol 1994; 41: 36-44.
7. Whyte W, Hodgson R, Tinkler J, Graham J. The isolation of bacteria of low pathogenicity from faulty orthopaedic implants. J Hosp Infect 1981; 2: 219-230.
8. Inman RD, Gallegos KV, Brause BD, Redecha PB, Christian CL. Clinical and microbial features of prosthetic joint infection. Am J Med 1984;77:47-53.
9. Davies UM, Leak AM, Dave J. Infection of a prosthetic knee joint with *Peptostreptococcus magnus*. Ann Rheum Dis 1988; 47: 866-868.
10. Kaandorp CJ, Van Schaardenburg D, Krijnen P, Habbema JD, van de Laar MA. Risk factors for septic arthritis in patients with joint disease. A prospective study. Arthritis Rheum 1995; 38: 1819-1825.