Unusual presentation of more common disease/injury

An atypical pneumococcal arthritis

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Summary

Bone and joint infections due to *Streptococcus pneumoniae* usually occur in patients who are immunocompromised, and involve one site. The unique case of a 49-year-old immunocompetent man, with an unremarkable medical history, with septicaemia and polyarticular septic arthritis involving the shoulder and knee and with cervical spondylodiscitis due to *S pneumoniae*, is described. In this case, *S pneumoniae* probably originated from the gingiva, which is commonly colonised in children and adults. *S pneumoniae* should be considered routinely when facing bone and joint infections, and multiple locations should be carefully sought owing to the possible lack of symptoms.

BACKGROUND

Bone and joint infections due to *Streptococcus pneumoniae* usually occur in patients who are immunocompromised, and are monolocular.^{1–4} We describe the case of an immunocompetent man, with an unremarkable medical history, with from knee and shoulder arthritis associated with cervical spondylodiscitis due to *S pneumoniae*.

CASE PRESENTATION

A 49-year-old man with an unremarkable medical history presented with arthritis of the right knee with a 38.5°C fever. An osteoarticular examination detected no other abnormalities. No heart murmur or other foci of infection were found upon physical examination except for chronic gum hypertrophy of unknown origin with gingivitis.

INVESTIGATIONS

Knee arthrocentesis produced grossly purulent fluid with *S pneumoniae*. Four bottles of blood cultures grew amoxicillin sensitive *S pneumoniae*. No Howell–Jolly bodies were seen on blood smears. Seric levels of Ig and IgG subclasses were within normal ranges. Serological tests were negative for HIV. The radiographs of the chest, facial sinuses and teeth were unremarkable. Transchest and transoesophageal echocardiography scans were normal. A full bone scintigraphy investigation showed uptakes in the right humeral head, the right knee and C5–C6 vertebrae, and signs of C5–C6 spondylodiscitis were demonstrated by MRI (figure 1). In addition to the bone scintigraphy, positron emission tomography showed a high-uptake lesion in the left maxillary area that was clinically consistent with gingivitis (figure 2).

TREATMENT

Knee aspiration produced rapid pain relief and intravenous antibiotic treatment with amoxicilline, 6 g daily for 12 weeks, and gentamycin 3 mg/day for 8 days was administered as recommended.⁵

OUTCOME AND FOLLOW-UP

We concluded the patient had a polyarticular arthritis involving the right knee, the right shoulder and the cervical spine due to *S pneumoniae* originating from gingiva. The patient's condition improved promptly after treatment, and he had fully recovered after 4 months.

DISCUSSION

This case is the first description to our knowledge of septicaemia with septic arthritis involving the shoulder and knee and with cervical spondylodiscitis due to *S pneumoniae*. Whereas upper and lower respiratory tract, ear and sinus infections and meningitis are the most common manifestations of *S pneumoniae* infection, bones and joints are less frequently targeted,⁶ and among those, 30% involve multiple locations.^{1,2} *S pneumoniae* is found in 3% to 10% of the cases of septic arthritis reported in the literature.^{1,2,4,7} However, vertebral involvement has rarely been described,^{8,9} likely because symptoms lack specificity and are vague or almost absent,¹⁰ as observed in our case. Consequently, the usual delay in diagnosis has been reported to be 2–4 months.⁵ In our case, bone scintigraphy was effective in the early diagnosis of cervical spondylodiscitis; the bacteriological diagnosis was established with isolation of *S pneumoniae* in both blood cultures, which usually rarely happens in cases of isolated vertebral spondylodiscitis,⁹ and fluid from the knee. Because haematogenous spread is considered to be the most important route for bone and joint pneumococcal infection, patients should be evaluated for a primary site of infection. However, extra-articular foci are found in 40% to 60% of patients.^{1–3} In our case, *S pneumoniae* probably originated from the gingiva because it is commonly colonised in children and adults,⁵ no evidence of infection was found elsewhere, and positron emission tomography CT features evoked gingivitis.

Thus, *S pneumoniae* should be considered routinely when faced with bone and joint infections, and multiple locations should be carefully sought owing to the possible lack of symptoms.

Figure 1 Sagittal fat-saturated, T2-weighted MRI image demonstrating loss of height in C5–C6 intervertebral disc and neighbouring vertebral bodies, peridiscal inflammation and endplate irregularity.

Figure 2 Positron emission tomography showing high-uptake lesions in the right shoulder and the upper-left mandible (arrow) related to gingivitis.

Learning points

- ▶ *Streptococcus pneumoniae* should be considered routinely when faced with bone and joint infections.
- ▶ In cases of bone and joint pneumococcal infection, patients should be evaluated for a primary site of infection.
- ▶ Multiple bone locations should be carefully sought owing to the possible lack of symptoms.

Competing interests None.

Patient consent Obtained.

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