

Fusobacterium pyomyositis of the shoulder after tonsillitis

Report of a case of Lemierre's syndrome

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A case of nontropical pyomyositis is reported in a young male without predisposing factors. The disease was preceded by a tonsillitis, and the presentation initially suggested a septic arthritis of the shoulder. *Fusobacterium*, a highly unusual pathogen in pyomyositis, was isolated from an abscess in the

infraspinatus muscle. The increasing frequency of the disease in areas with a temperate climate and the pathogenesis are discussed. Our case had the classic features of Lemierre's syndrome: invasion of the bloodstream by *Fusobacterium* species from a tonsillitis.

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Pyomyositis is an abscess-forming inflammation of striated muscle tissue. It is frequently encountered in the tropics; and, in the last decade, it has been increasingly diagnosed in areas with a temperate climate, especially in immunocompromized patients. In pyomyositis, gram-negative bacteria are hardly ever reported as a causative pathogen.

We report a case of nontropical *Fusobacterium* pyomyositis that was preceded by a tonsillitis.

Case report

A 19-year-old male presented at our orthopedic outpatient clinic with a painful left shoulder. The patient felt weak and feverish. There was no history of recent trauma or travel abroad. Symptoms had gradually developed after the patient had undergone a period with a sore throat and fever 4 weeks earlier. At that time, his family physician diagnosed tonsillitis. One week of cotrimoxazole therapy relieved the complaints of pain when swallowing, but the patient continued to feel feverish. On physical examination, all the movements of the left shoulder were painful. A septic arthritis was initially suspected. Plain radiography of the shoulder region was normal, whereas an ultrasound examination revealed irregular hypodensities in the infraspinatus muscle area. The patient refused puncture of the lesions and returned home.

Three days later, he revisited the clinic because of increasing pain and malaise. Again, a physical exami-

nation confirmed painful shoulder movements. The body temperature was 38.6 °C with a pulse rate of 132 beats per minute; further, he had a leukocytosis of $30 \times 10^9/L$ and an ESR (Westergren) of 117 mm/h. All routine laboratory values were normal. Now, an abscess in the infraspinatus muscle was suspected, which was confirmed by ultrasonography, but still no signs of an abscess could be demonstrated upon physical



Figure 1. Abscess cavity in the left infraspinatus muscle that is filled with contrast medium.

examination. Ultrasound-guided drainage of the abscess yielded 25 mL of pus from which *Fusobacterium* species was cultured. Blood cultures also grew *Fusobacterium*. Infusion of the abscess cavity with contrast medium showed that the abscess had extended up to the humerus (Figure 1).

Soon after administration of intravenous cefuroxim, the patient became afebrile, and his condition improved remarkably. He was discharged in good health and had an uneventful recovery of his shoulder function. A HIV-test (anti-HIV ELISA) was negative.

Discussion

Pyomyositis is a bacterial infection affecting skeletal muscles that leads to abscess formation. The abscess develops within the boundaries of the muscle fascia, but does not extend into the subcutaneous tissues. This is the main reason why there is an absence of the classic signs of an abscess, such as throbbing and redness of the overlying skin. Pyomyositis can mimic septic arthritis, osteomyelitis, and neoplasm, and as such may present to the orthopedic surgeon (Andrew and Czyz 1988).

Although generally regarded as a tropical disease, in recent years, pyomyositis has been increasingly diagnosed in areas with a temperate climate (Gibson et al. 1984). A major portion of the group of patients that have contracted this so-called nontropical pyomyositis have been immunocompromized, including AIDS (Wolf et al. 1990). Nevertheless, the disease remains uncommon, and unfamiliarity with it often leads to a considerable delay in diagnosis and, consequently, in the commencement of appropriate therapy, resulting in prolonged hospitalization and a worse prognosis.

In the majority of the cases of pyomyositis, *Staphylococcus aureus* is the causative agent (Mader et al. 1987). Streptococcal species account for the remainder of culture-positive cases (Sarubbi et al. 1989). A patient with streptococcal pyomyositis following a sore throat has been described by Mattingly and Mowat (1981). Gram-negative pyomyositis is clearly a rarity; only 1 case of *Fusobacterium* pyomyositis has been described (Wendling et al. 1987).

Metastatic complications from *Fusobacterium* sepsis after an oropharyngeal infection have been described as necrobacillosis or Lemierre's syndrome (Lemierre 1936, Gubler et al. 1990). In our patient,

pyomyositis was a curious, but classic, manifestation of Lemierre's syndrome.

One common factor has been assumed for the pathogenesis of pyomyositis: muscle tissue may be traumatized by injury and parasitic infections preceding a bacteremia, and thus forming a "locus minoris resistentiae" for bacteria with resulting abscesses. In our patient the *Fusobacterium* bacteremia most likely resulted from the tonsillitis (Henry et al. 1983), but neither a preexisting muscle trauma nor a major immune deficiency could be demonstrated. This is not uncommon, as other cases of pyomyositis without any predisposing factors have been reported (Menon et al. 1984, Gyssens and Timmermans 1989).

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