Case Report

Solitary Pyomyositis of the Left Rhomboideus Muscle Caused by *Streptococcus anginosus* and *Streptococcus intermedius* in an Immunocompetent Person

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Primary pyomyositis is a bacterial infection of the skeletal muscle commonly affecting children with *Staphylococcus aureus* most often isolated as a pathogen. However, pyomyositis caused by anaerobic bacteria is rare in adults. Here, we report a case of solitary pyomyositis of the left rhomboideus muscle caused by *Streptococcus anginosus* and *Streptococcus intermedius*. He was a healthy person, without any underlying disease. To the best of our knowledge, this is the first case report of solitary rhomboideus pyomyositis caused by a mixture of anaerobic pathogens in an immunocompetent person.

1. Introduction

Pyomyositis is a purulent infection of the skeletal muscle caused by anaerobic or aerobic bacteria. Pyomyositis usually involves the large muscles located around the pelvic girdle and lower extremities, such as the buttocks and quadriceps, but muscles around the shoulders are rarely involved [1]. The pathogen most commonly isolated from injured skin is *Staphylococcus aureus*; but, in rare cases, pyomyositis could be caused by anaerobic pathogens.

We report here a case of solitary pyomyositis of the left rhomboideus muscle caused by both the anaerobic bacteria *Streptococcus anginosus* and *Streptococcus intermedius*. He was a healthy person, without any underlying disease. To the best of our knowledge, this is the first case report of solitary pyomyositis of the shoulder muscle.

2. Case Presentation

A 70-year-old Japanese man was admitted to our emergency room because of high fever and left shoulder pain in May, 2013. His medical history was unremarkable and he was taking no medications. He had not undergone any regular medical check-up. About 1 week before admission, he suddenly developed a fever of more than 38 degrees. About 4 days later, he developed pain and swelling of the skin around the left scapula, and he had difficulty in lifting his left upper limb. His symptoms persisted; thus, he was admitted to our...
hospital. He did not have any recent trauma nor did he travel to any tropical countries.

On admission, he was in good condition, without abnormalities of vital signs except for a body temperature of 38.4 degrees and a heart rate of 111/min. On physical examination, the flaring and swelling of the skin just below his left scapula were observed. The affected skin area was over 8 cm in its major axis. He also felt tenderness in this area. He had normal heart and respiratory sounds and no abnormalities in the abdominal region. No superficial lymph nodes were palpable, and no rashes or scars were observed in his entire skin. Laboratory examination results indicated severe inflammation: white blood cell count, 17200/μL; C-reactive protein (CRP) level, 13.3 mg/dL. None of the myogenic enzymes showed elevated levels. He did not have diabetes nor did he have human immunodeficiency virus (HIV). Computed tomography (CT) revealed swelling of the left rhomboideus muscle and a solitary low-density area (LDA) around a contrast enhancement in this muscle (Figures 1(a) and 1(b)). No other abnormalities were detected in the thorax or abdomen. From these findings, we suspected the presence of intramuscular abscess; thus, we punctured the affected area. However, the puncture fluid was bloody with no gross pus. After the puncture, we started empiric therapy using intravenous administration of ceftriaxone (CTRX, 2 g b.i.d.).

On Day 7 of hospitalization, his condition did not improve and CT showed the enlargement of LDA in the left rhomboideus muscle. No organisms were isolated by the cultures of blood sampled several times. No vegetation was detected by transthoracic echocardiography. On Day 9 of hospitalization, we decided to perform incision and drainage of the left rhomboideus muscle. *S. anginosus* and *S. intermedius* were isolated by the culture of drainage fluid. On oral examination, multiple treated dental caries and periodontitis with pus were found. At that time, he was diagnosed as having solitary pyomyositis of the left rhomboideus muscle. We considered that the source of pyomyositis was periodontitis, although we did not detect a bacterial growth in the pus collected from the dental caries.

After the drainage, we empirically switched the antibiotics to intravenous meropenem (1.5 g t.i.d.) for 14 days; then his symptoms gradually improved. His carious teeth were extracted during meropenem administration. At that time, CT showed residual LDA in the left rhomboideus muscle (Figures 1(c) and 1(d)), and his laboratory examinations showed the persistence of CRP positivity (0.8; normal range, 0 to 0.5 mg/dL). Therefore, we switched to oral amoxicillin (AMPC, 750 mg t.i.d.) on the basis of results of the antimicrobial susceptibility test and continued it for two months. After finishing the AMPC treatment, magnetic resonance imaging
Pyomyositis is a purulent infection of the skeletal muscles that may occur at any age. It involves any muscles, usually the large muscles located around the pelvic girdle and lower extremities, but muscles around the shoulders are rarely involved. Bickels et al. reported the anatomic distribution of primary pyomyositis in 676 patients [1]. They noted that the most frequently involved muscles were those around the quadriceps (26.3%), and the involvement of those around the shoulder including the rhomboideus muscle was found in only 7.9% of these patients. Pyomyositis can usually be a complication in immunocompromised conditions such as HIV and diabetes mellitus [1–3]. Our patient was not immunocompromised, but primary pyomyositis in shoulder regions may require a longer time to resolve than that in the pelvic girdle and lower extremities.

In summary, we described a case of solitary rhomboideus pyomyositis caused by S. anginosus and S. intermedius in an immunocompetent person.

### Conflict of Interests

The authors declared no conflict of interests.
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