Pyomyositis and osteomyelitis: an unusual cause of abdominal pain

Michimasa Fujiwara, Yoshiko Abe, Aya Kodera, Tooru Araki

Department of Pediatrics,
National Hospital Organization
Fukuyama Medical Center,
Fukuyama, Japan

Correspondence to

Dr Michimasa Fujiwara,
miclegend2020@yahoo.co.jp

Accepted 28 February 2018

DESCRIPTION

A previously healthy 12-year-old boy was referred with a 2-day history of fever and abdominal pain in the right lower quadrant. He had no traumatic episodes. A physical examination indicated tenderness of the right lower quadrant without rebound tenderness and muscular defence. His gait was normal. His white blood cell count was $4.6 \times 10^9/L$ and his C reactive protein (CRP) value was 5.9 mg/dL. The findings of abdominal ultrasound examination and enhanced CT were normal and ruled out appendicitis. Mesenteric lymphadenitis was initially diagnosed and empirical therapy with intravenous cefmetazole 100 mg/kg/day was started. On day 3 after admission, his fever abated. However, his blood culture was positive for methicillin-susceptible *Staphylococcus aureus* (MSSA), and his abdominal pain persisted. Contrast-enhanced MRI revealed hyperintense signals on T2-weighted images in the right internal abdominal oblique muscles (figure 1A) and in the right proximal femur (figure 1B). Inflammation did not involve the skin surface, right external oblique muscle, hip joint or pelvic muscles. We ultimately diagnosed pyomyositis of the right internal abdominal oblique muscle and osteomyelitis of the proximal femur due to MSSA bacteraemia. Cefmetazole was switched to cefazolin 150 mg/kg/day for 2 weeks, which caused his blood culture to become negative. Antibiotic therapy was switched to oral cefaclor 50 mg/kg/day after erythrocyte sedimentation rates and CRP values had normalised. He continued with cefaclor for 4 weeks and completed a total of 6 weeks of systemic antibiotic therapy. Drainage was unnecessary because of a favourable response to the antibiotics. He remained asymptomatic at 1 year of follow-up.

We described a patient with rare pyomyositis and osteomyelitis that were caused by MSSA infection in an immunocompetent boy. Pyomyositis is a primary

pyogenic infection of the skeletal muscle. Patients with pyomyositis usually present with fever, acute muscle pain and a limp because the predilection sites of pyomyositis are the lower limbs and pelvic muscle.¹ The abdominal wall including the internal abdominal oblique muscle accounts for only 1.6% of all sites of pyomyositis.¹ Another review revealed that all of 45 patients with pyomyositis were affected by position except abdominal wall.² Therefore, the presentation of pyomyositis as abdominal pain in the present case was unusual.

Enhanced CT was not informative in this patient, whereas MRI led to a definitive diagnosis. MRI is the most useful diagnostic modality because it can identify coexisting bone involvement.³ Delayed diagnosis and treatment of pyomyositis contribute to various complications such as osteomyelitis and septic arthritis, with osteomyelitis being the most frequent (41%).² The fever and right quadrant pain in this patient might have resulted from pyomyositis of the abdominal wall, whereas he had no thigh pain or gait disturbance that suggested femoral osteomyelitis. Therefore, the osteomyelitis in this patient was considered secondary to the bloodstream infection caused by MSSA.

Pyomyositis is difficult to diagnose due to extremely diverse clinical manifestations. In conclusion, all clinicians should have a high degree of suspicion and an understanding of pyomyositis to ensure early diagnosis and treatment that will prevent severe complications and sequelae.

Learning points

- ▶ Patients with non-specific abdominal pain should be considered for pyomyositis of abdominal wall.
- ▶ MRI is the most useful modality to diagnose pyomyositis.

Figure 1 Fat-saturated T2-weighted coronal imaging showing hyperintense signal both in the right internal abdominal oblique muscle (A, arrows) and in the right proximal femur (B, arrowhead).

Contributors MF, YA, AK and TA treated the patient. MF drafted the manuscript. TA reviewed and revised the manuscript, and all authors approved the final manuscript.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent Parental/guardian consent obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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To cite: Fujiwara M, Abe Y, Kodera A, et al. *BMJ Case Rep* Published Online First: [please include Day Month Year]. doi:10.1136/bcr-2017-223871

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