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Case report

Non-operative management of tropical pyomyositis

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Introduction

Pyomyositis, originally described as an endemic disease in the tropics, is the formation of abscesses in striated muscle. However, in India it has not been widely reported though there have been sporadic case reports.¹ A high index of suspicion is required for the diagnosis of this condition. An early and aggressive treatment prevents morbidity and possible mortality. The treatment is usually surgical with fasciotomies, drainage of abscesses, and subsequent multiple procedures which result in prolonged morbidity and hospitalisation. We present a young male recruit whose treatment was non-operative as he was diagnosed and managed early, thereby minimising morbidity and allowing retention in service.

Case report

A 20-year-old male recruit presented with pain in the right thigh and high grade, intermittent fever of two days duration. He gave a history of unaccustomed exertion in the form of swimming just prior to onset of symptoms. On examination, the patient looked toxic, had facial puffiness, fever of 39.8°C,

tachycardia (pulse 130/min) and hypotension (blood pressure 94/60 mmHg). There was diffuse, acutely tender swelling of right thigh, more so on the anteromedial aspect. Local skin temperature was markedly raised. There was no localisation of pus clinically. A patellar tap was present over right knee with no overt signs of septic arthritis. Movements at right hip and knee were markedly restricted. Distal arterial pulsations were well felt. There was no evidence of deep venous thrombosis or ipsi-lateral inguinal lymphadenitis. No abnormality was detected on systemic examination. A clinical diagnosis of pyomyositis with sepsis was entertained. Investigations revealed leucocytosis (total leukocyte count [TLC] 13,200/mm³) with polymorphonuclear predominance (70%). Erythrocyte sedimentation rate (ESR) was 94 mm fall at the end of first hour. He was euglycaemic. There was azotaemia (blood urea 59 mg/dL and serum creatinine 2.1 mg/dL) with a deranged liver function test (serum bilirubin 0.9 mg/dL, serum AST 90 U/L and serum ALT 120 U/L). There was no dyselectrolytaemia. Human immunodeficiency virus (HIV) status was negative and blood culture was sterile. Radiographs of right thigh did not reveal any gas in myofascial planes and that of the right knee showed fullness in the suprapatellar region suggestive of synovial effusion. Chest radiograph was normal.

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Ultrasonographic examination of abdomen was normal, but that of right thigh revealed vastus intermedius and medialis muscles to be enlarged, hypoechoic, and oedematous with numerous small anechoic areas interspersed between muscle fascicles (Figs. 1–3). There was also fluid noted in the supra patellar pouch. Multiple guided aspirations including that of the knee joint revealed serous fluid but no pus, all aspirates being sterile. The patient was treated with parenteral antibiotics (cloxacillin and cefotaxime) for two weeks and local splintage. The septic process subsided in four days and all deranged investigation reports reverted back to normal. The sympathetic knee joint effusion gradually regressed over two weeks and the patient had no residual thigh swelling clinico-sonologically (Fig. 4). Movements of right hip and knee were full in range. He was discharged from hospital in medical classification SHAPE 1 and thus was retained in service. The patient was followed-up for over a year after management. He stayed asymptomatic during this period.

Discussion

Pyomyositis, which involves the formation of abscesses in the striated muscle, was first described in 1885 by Scribe.² It is of two types, one found in tropics and the other in temperate regions. The one in tropics affects the otherwise healthy children and young adults, as in our patient. There is an association with trauma^{3,4} that renders muscles, commonly large ones, vulnerable to subsequent infection, as was evident in our patient. The disease follows a definite clinical course.⁵ Stage 1 (invasive) is characterised by an insidious onset of diffuse pain with or without pyrexia. Stage 2 (purulent) involves progressive induration, pain, and overt enlargement

Fig. 1 – Ultrasonogram of both thighs (anteroposterior view) showing enlarged, hypo-echoic and oedematous right vastus intermedius (labelled 'VI') with small anechoic areas interspersed between muscle fascicles seen to the left of the photograph. Both femora are labelled as FEM. The healthy left sided vastus intermedius is shown for comparison.

Fig. 2 – An oblique view of the ultrasonogram of the right thigh showing enlarged, hypo-echoic and oedematous right vastus medialis (labelled 'VM'). The femur is labelled as FEM.

of the mass. Stage 3 (late) involves the development of intense pain, muscle suppuration with extension into an adjacent bone or joint leading to septicaemia, and death in 1.8% of patients. Our patient presented late in the second stage.

Fig. 3 – An oblique view of the ultrasonogram of the left thigh showing a healthy and normally sized vastus medialis (labelled 'VM') as compared to the contralateral muscle as seen in Fig. 2. The femur is labelled as FEM.

Fig. 4 – Ultrasonogram of both thighs (anteroposterior view) showing reduction in size of right vastus intermedius labelled ‘VI’ seen to the left of the photograph following successful treatment after two weeks. The sizes of both vasti are comparable.

Aetiologically, the most common organism isolated is *Staphylococcus aureus* in 95% of cases in tropics. However, blood and pus cultures are positive only in 30–35% and 60–70% of cases, respectively.^{3,6} Owing to lack of specificity of laboratory testing, high clinical suspicion and early radiologic evaluation are keys to diagnosis, as in our case.

Investigations show leucocytosis with neutrophilic predominance and an elevated ESR. Magnetic resonance imaging (MRI) is the imaging modality of choice in suspected pyomyositis.⁷ However, ultrasound and computed tomography (CT) scanning are more readily available, the former being cost-effective. In our centre, the facility for CT and MRI scans did not exist. Therefore, ultrasonogram was resorted to and it helped to clinch the diagnosis.

Differential diagnosis includes osteochondritis, osteomyelitis, thrombophlebitis, and deep venous thrombosis. Treatment is with systemic antibiotics like cloxacillin and flucloxacillin that

cover *S. aureus*, given for 2–6 weeks. Aggressive treatment remains surgical by ultrasound or CT guided needle aspirations or, if the condition so desires, open drainage of pus and extensive debridement. In our patient, poor localisation of pus and improvement with systemic antibiotics precluded open surgical drainage. Thus prolonged hospitalisation, multiple operations and morbidity in a young individual was averted. As the disease process was diagnosed and arrested early, the young recruit could be sent back for training and was consequently retained in service.

Conflicts of interest

None identified.

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