Pyomyositis with Pericarditis

I. M. Matar, H. M. S. Mobayedh, A. L. Al-Khal, J. C. Davidson

Pyomyositis is a common condition in tropical countries particularly East Africa and New Guinea but has to our knowledge not been reported from the Arabian Gulf area. Diagnosis may be difficult and complications may be evident before muscle involvement is detected. We describe the clinical features and management of a patient with pyomyositis.

A 25-year-old previously healthy Pakistani employed as a soldier in the Qatari Army was admitted to hospital because of fever, headache, dry cough and left sided chest pain aggravated by breathing. His symptoms had been present since returning from Pakistan 5 days earlier. The day before admission he had some pain and swelling of his left lower leg without any history of injury. Examination showed a well nourished but ill looking patient. His temperature was 38 °C, pulse 120/min, and respiratory rate 20/min. Examination of the chest revealed crepitations in the left lower zone. The other positive finding was a tender sausage-like swelling, three centimetres deep and wide and ten centimetres long on the posterior chest wall parallel to the 8th rib. The anterolateral aspect of the left leg below the knee was red swollen, hot and tender. No other abnormalities were detected.

The initial clinical assessment was erysipelas with possible pneumonia. Laboratory data included normal urinalysis and liver function tests. Haemoglobin was 14 g/dl, white cell count 16.8 x 10^9/l, segmented forms 38%, band forms 50%, lymphocytes 1%, monocytes 4%, and eosinophils 1%. Blood urea nitrogen and serum electrolytes were normal. Several blood cultures were negative. Chest radiograph showed infiltration in the left retrocardiac region, while an ECG showed minimal elevation of the ST segment in leads I, II, V5 to V6.

The patient was treated with penicillin G—600 mg intravenously 4 hourly. His condition improved and he became afebrile on the 3rd hospital day, but his temperature rose on the 5th day and a repeat radiograph of the chest showed cardiomegaly suggestive of pericardial effusion. Biopsy of the skin of the left leg showed histopathological features of erysipelas, while bacteriological examination of the biopsy site revealed a Staphylococcus aureus which was resistant to penicillin. Penicillin was discontinued and cloxacin 1.5 g intravenously 6 hourly was started. On the 7th day an attempt was made to aspirate the swelling on the chest wall but no fluid was obtained. The patient continued to be febrile. On the 8th day the swelling of the anterior compartment of the left leg had increased and fluctuation was detected, incision produced creamy looking pus which on culture grew Staphylococcus aureus resistant to penicillin.

Echocardiography showed moderate posterior pericardial effusion, pericardiocentesis yielded 150 ml of serosanguinous fluid containing 4.5 g/dl protein, total WBC 11.4 x 10^9/l polys 97% lymphs 3%, but was sterile on culture.

The fever ranged from 37.8-39 °C and the patient remained ill and toxic. On the 11th day he complained of pain in his right thigh, which was swollen and tender; computed tomography of the thigh revealed an abscess in the quadriceps muscles, which was drained and 150 ml of purulent fluid was obtained, the culture of which yielded a growth of peptostreptococci. Penicillin 1.2 g was reintroduced intravenously, but inspite of adequate
drainage the fever continued and vancomycin 500 mg 6 hourly was commenced intravenously.

On the 20th day a second echocardiography revealed reduction in the amount of pericardial effusion. However, no fluid could be obtained on pericardiocentesis. A small pleural effusion had developed and aspiration produced 20 ml of straw coloured fluid which was sterile on culture.

Anti-HIV antibodies were negative; liver function tests showed a rise in the alanine aminotransferase to 225 units/l and of aspartate aminotransferase to 130 unit/l with prolongation of the prothrombin time to 20 s with a control of 12 s; although the patient had no clinical signs of liver disease the possibility of multiple hepatic microabscesses was considered, but ultrasound examination of the liver was normal.

Because of the continued high fever with negative blood cultures the pyrexia was thought to be due to antibiotic therapy and vancomycin was discontinued. During the 4th week the patient's general condition gradually improved, the fever settled and the drainage from the incised abscesses diminished. By the 30th hospital day the patient was afebrile and radiography of his chest showed clearing of the pneumonic consolidation and effusion as well as reduction in the cardiac size. The patient was discharged from the hospital 40 days after admission to continue oral cloxacillin for a further 2 weeks.

At follow-up 2 weeks after discharge he was well, the drainage incisions almost healed and he had no signs of cardiac disease. We intend to follow this patient carefully with repeated clinical and echocardiographic assessment to detect any possible early signs of pericardial constriction.

Discussion

This patient illustrates the difficulties in the diagnosis of pyomyositis and the complications which may occur and which can be the initial features of the condition.\(^1\) Retrospectively the inflammatory lesion which clinically and histologically appeared to be erysipelas was probably pyomyositis with spread to the overlying skin. The significance of the ECG changes as indicative of pericarditis was not appreciated, because of the lack of signs or symptoms of pericarditis. It seems likely that the pericarditis and pneumonia with effusion were both staphylococcal in origin but the intensive antibiotic therapy before aspiration rendered the fluid sterile. It was not until signs appeared in the thigh that the diagnosis of pyomyositis was considered. The indurated swelling in the chest wall from which no fluid could be obtained was probably an area of myositis which did not progress to frank suppuration. Similar lesions have been previously described in pyomyositis.\(^2\) The presence of organisms other than staphylococci in the muscle has been noted in cases reported from East Africa\(^2\) and more recently from the USA.\(^4,5\)

The difficulty in making a diagnosis both in countries where the disease is common and where it is rare have been underlined in many reports.\(^1,3,4,6,7\)

In the East African autopsy study, pyomyositis was not detected during life in six of 19 patients.\(^1\) Unfamiliarity with this condition often leads to delay in diagnosis. Computed tomography is considered to be the most useful tool for the diagnosis of pyomyositis by detecting pus collection in the muscles where it may be difficult to detect clinically.\(^6,7\)

Our choice of antibiotics was dictated initially by the clinical impression of pneumonia with erysipelas. The isolation of the resistant staphylococci from the lower leg indicated the need for cloxacillin and vancomycin was added due to the failure of the patient to improve. Penicillin was reintroduced in larger dosage when the peptostreptococcus was isolated from the thigh. The early use of an antistaphylococcal penicillin before the diagnosis of pyomyositis was made probably ensured the good outcome in this unusual case.

References


