CASE RECORD

Name of Hospital:	: Teaching Hospital, Jaffna
Name of Consultant:	: Dr. T. Peranantharajah (Consultant Physician)
Case No:	: 02
Ward:	: 10
BHT:	: 47232/2020
Name:	: Mr. S. Ravi
Age:	; 20 years
Date of admission:	; 18.06.2020
Date of discharge:	: 03/07/2020

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Case – 02

Pyomyositis triggered by sudden lifting of a heavy object.

Abstract

Pyomyositis is a rare disorder often observed in healthy young people. It results from coincident transient bacteremia and minor muscle injury. It may not be taken into the consideration in sub -tropical regions. So, we need to keep it in our mind whenever a case manifests with fever associated with myalgia and constitutional clinical features. Without delaying, the diagnosis should be made early to start antibiotics for better recovery. We report a male with the age of 20, who is free of any other medical conditions presented to us complaining of pain followed by localized tender swelling in the inter scapular region of posterior aspect of the chest. It was associated with fever after lifting of heavy object. He had a good recovery following prolong course of antibiotic treatment and surgical d rainage of the collected material.

Key words: Pyomyositis, Bacteraemia, Antibiotics

Introduction

Pyomyositis is an infection that affects the skeletal muscle and often there are precipitating conditions like immunodeficiency, malnutrition, strenuous exercise, skin sepsis, intramuscular illicit injection of drugs, autoimmune disorders and trauma. Both children and adults may be affected. Pyomyositis usually occurs in the group of large muscles like gluteus, quadriceps femori and hamstrings of hip and thigh region. There are some evident shows *Streptococci, Escherichia coli, Mycobacterium tuberculosis* and *Staphylococcus aureus* contribute majority of the patients. Even though, because of wide spread use of antibiotics *Staphylococcus* which is resistant to methicillin is the mostly isolated pathogen recently. Bacteria is the usual aetiological agent to cause pyomyosistis. Fungus, viruses, and parasitic infection also contribute. Immunodeficiency state like diabetes, AIDS, patients using steroids, immune suppressive therapy such as disease modifying anti-rheumatic treatment and biological agents predisposes this condition.

As there are no definitive criteria or guidelines, insignificant clinical presentations and wide range of different conditions mimicking this, mostly misdiagnosis is made. Pathophysiology of pyomyositis is due to two different events occurs each other.

Haematoma which is subclinical develops following injury of muscles due to acute or chronic prolonged usage. Bacteraemia occurs in few days of such muscular injury and organisms thought to be invading inside the haematoma. Suppurative myositis may evolve slowly. There are three phases in a sequential order. At the beginning muscular pain will develop in the damaged muscle group. It is followed by nonspecific constitutional clinical features. The next phase is called suppurative which shows symptoms and signs of localised sepsis. It can be associated with inflammation and later systemic infection. It will take nearly 21 days to manifest. Purulent fluid will be aspirated in this second phase. Ultrasonically hypo echoic fluid collections with surrounding hyper echoic myofibrils, fascial plane and high vascularity of wall of the abscess were identified. If not identified and treated, it may progress to next third phase of suppuration. Third phase is manifested with fever spikes, intolerable severe muscle pain, clinical features of septicaemia and shock.

Case presentation

A previously healthy 20-year-old gentleman without co-morbidities presented with the complaint of insidious onset, gradually progressive, left side upper back of the inter-scapular pain for 3 days duration. He had restricted movements of the body as pain was aggravated with it. There is a history of heavy weight lifting (around 50 kg) three days prior to this symptom. He also developed fever and constitutional clinical features. He was advised to rest and supportive treatment was given. Though his condition was deteriorating with persistent high spike fever, local swelling in the left interscap ular regio n on third day of admission.

There was no history of left upper limb numbness or weakness. He does not have arthralgia or skin rashes. His past surgical and allergic histories were unremarkable. He is a football player and a manual worker. He is a nonsmoker and does not consume alcohol or illicit drugs. He denies to have high risk sexual behavior. There is no history of recent travel.

On examination there was tenderness over the interscapular region. But no localised swelling and no evidence of cervical and axillary lymphadenopathy. He developed a lump without associated overlying dermatological abnormalities on third day of hospital admission. He did not have neurological weakness distal to the lesion. He had normal haemodynamic parameters and o ther system examination was normal.

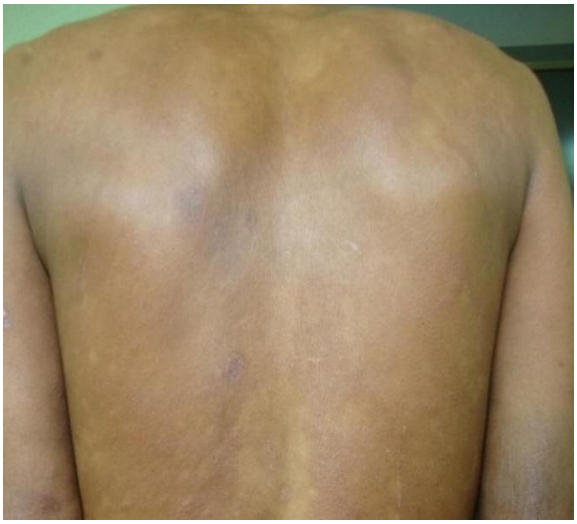
Laboratory investigations showed neutrophil leukocytosis (white cell count of 45.65 $\times 10^9$ micromol/Land neutrophils 35.06 $\times 10^9$ micromol/L) with high inflammatory markers (C- reactive protein was 437 mg/dL, and ESR was 80 mm/1st hour), Haemoglobin was 14.4 g/dL, platelet was 647 $\times 10^9$ micromol/L with normal renal, hepatic, lactate dehydrogenase (LDH), serum amylase and coagulation parameters. Random blood sugar was 114 mg/L which was normal.

Table: 1 Other investigations

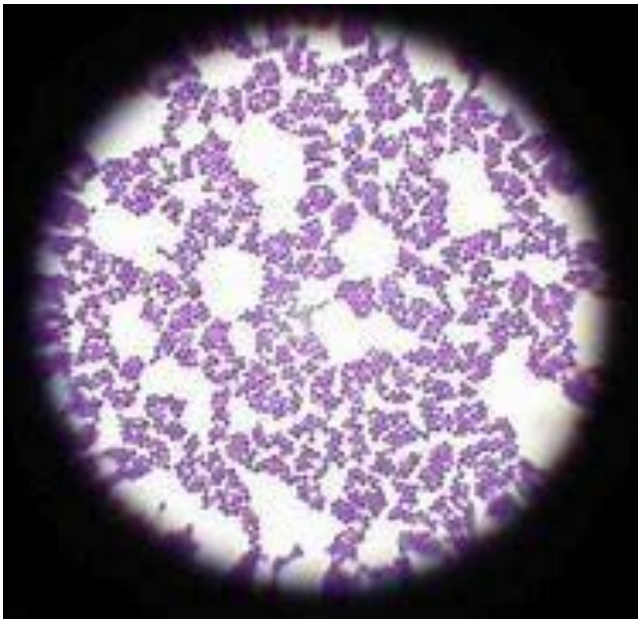
Serum albumin corrected Calcium level (mmol/L)	2.51	(2.2 -2.6)
Serum Magnesium level (mmol/L)	0.91	(0.7 – 1)
Serum Phosphate level (mmol/L)	1.41	(0.8 -1.5)
2d echo	Normal	
Blood picture	Neutrophil leukocytosis due to underlying infection	
CPK	113 mmol/L(40 -320)	
Blood culture and Pus culture	Staphylococcus was isolated which was sensitive to Clindamycin, Ciprofloxacillin, Fusidicacid, Cotrimoxazo le and Vancomycin.	
HIV and VDRL screening	Negative	
Leptospirosis antibody	IgG and IgM – Negative.	

He was initially started on intravenous Ceftriaxone 1g 12 hourly. Due to the persistent worsening of symptoms even after three days of treatment, intravenous Meropenum 1g 8 hourly was added and continued for 10 days. At the same time ultrasound guided aspiration was done from the inter scapular swelling. Sample was sent for pus culture and ABST which showed *Staphylococcus aureus* which was resistant to methicillin. It was responsive to Clindamycin, Ciprofloxacillin, fusidic acid, Cotrimoxazole and Vancomycin. According to the sensitive pattern intravenous Clindamycin 600 mg 8 hourly was given and continued for 7 days. With these treatment patient was clinically improved and discharged on day 15 with oral Clindamycin 300mg 6 hourly for 7 days. He was asymptomatic during review at medical and surgical clinic after one weekof discharge.

Picture: 1 **Pyomyositis in the interscapular region**



Staphylococcus aureus **isolated from blood and pus culture**



Discussion and conclusion.

Pyomyositis is a purulent infection involving the skeletal muscles that arises from haematogenous spread of organisms usually with the abscess formation. *Staphylococcus aureus* is the commonest bacteria causing it into a skeletal muscle. Though any group of muscles can be affected, most often it involves iliopsoas, trunk, pelvis, upper limb and paraspinal muscles. It is a rare disorder commonly affects children and adult. From the literature review over the recent years it is reported among the patients with chronic disease and immunosuppression. Muscle haematoma complicating with abscess and soft tissue sarcoma are the main differential diagnosis of pyomyositis.

Radiographically with magnetic resonance image is valuable diagnostic tool for pyomyositis. It also define the sites of infection and rules out differential aetiologies. Drainage materials and blood can be cultured to make bacterial diagnosis. Elevated white blood cell count and high inflammatory markers are nonspecific laboratory report findings. Usually creatine phospho kinase level is normal.

Antibiotic treatment alone is sufficient to treat stage 1 pyomyositis. Most of our patients present in the stage 2 and 3 of the illness. Therefore antibiotics and surgical drainage are crucial for the cure. Parenteral antibiotic like Vancomycin is the preferred therapy for severely ill patients. A loading dose of 20-35mg/kg is the appropriate treatment. Maintenance dose is 15 -20mg/kg every 8 to 12 hours if renal function is normal. Intravenous Daptomycin 4mg/kg daily and Linezolid 600mg twice daily are other alternative agents.

Percutaneous drainage with the image guidance is an option for stage 2 and 3 disease. It is useful to achieve microbiological diagnosis early and a therapeutic option as well with the antibiotic treatment.

Our patient was presented in stage 2 and successfully managed with intravenous antibiotics and surgical drainage of the abscess.

Informed Consent

Informed consent was obtained from the patient.

Abbre viations

MRSA - Methicillin resistant *Staphylococcus aureus*

IV – Intravenous

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