Available online at www.medicinescience.org

Medicine Science International Medical Journal

CASE REPORT

Medicine Science 2021;10(2):627-30

Pectoral tropical pyomyositis: Arare case report

Sugam Krishna Singh[1], Dharmendra Singh[2], Arun Kumar M[3]

[1]Department of Internal Medicine, MH Khadakwasla, Pune, India
[2]Department of Internal Medicine, 178 MH, Gangtok, India
[3]Department of Surgery, 178 MH, Gangtok , India

Received 01 August 2020; Accepted 01 November 2020
Available online 21.05.2021 with doi: 10.5455/medscience.2020.08.153

Abstract

Tropical Pyomyositis is a suppurative infection commonly involving the skeletal muscle. Trauma in an immunocompromised patient predisposes to this condition. Early and prompt diagnosis along with parenteral antibiotics, analgesia and surgical debridement as and when necessary forms the main stay of treatment. In this case report, we present how a 49-year-old male who had a missed diagnosis in general outpatient department of a tertiary care hospital, was later promptly diagnosed in specialist department and treated aggressively without progressing in to worst systemic complications.

Keywords: Tropical pyomyositis, immunocompromised, skeletal muscle

Introduction

Tropical Pyomyositis is defined as suppurative infectious disease involving skeletal muscle, usually encountered in tropical countries. Rarity and unfamiliarity of the disease, atypical presentation and a wide range of masquerading conditions [1]. often delays the diagnosis and management. We present a case of young diabetic male who presented with right sided chest pain, swelling and feature of SIRS and got easily missed out initially in general outpatient department (OPD).

Case Report

49-year-old male, an old case of Type 2 Diabetes Mellitus (T2DM) on medications presented with history of right sided chest pain of three days duration, which was cramping in nature radiating to right shoulder and increased on inspiration. This was associated with local swelling over right chest, redness, loss of appetite and generalized weakness. There was no history of trauma, lifting heavy objects, fever, cough, dyspnea, syncope or palpitations. His general and systemic examination was normal. He had initially presented to OPD of a tertiary care center where he was treated with analgesics with no significant relief. He progressively deteriorated and developed high grade fever with increased severity of pain. He was referred to specialist OPD where his local examination revealed a diffuse swelling over right chest. There was erythema of the overlying skin with no sinus / pus points. The swelling was firm, non- fluctuant with severe tenderness and more localized towards the upper quadrant of right breast. Range of movements at right shoulder was grossly restricted due to pain and the axillary lymph nodes were palpable. Features of Systemic Inflammatory Response Syndrome i.e. tachycardia, hypotension, dehydration, neutrophilic leucocytosis, azotemia and deranged coagulation profile with elevated INR was detected. Based on the clinical findings, a differential diagnosis of Cellulitis / pyomyositis / muscle hematoma with secondary infection were considered. He was initially managed with broad-spectrum antibiotics, liberal analgesia and supportive treatment with fluids under CVP guidance.

He was further radiologically investigated. Ultrasonography of the chest showed inflamed right pectoral muscle with hypoechoic areas in between fibers. Color Doppler Flow Imaging of the right chest showed diffuse subcutaneous swelling without any vascular enhancement. MRI Chest with contrast showed loculated necrotic collections masking right pectoralis muscle with diffusely

***Corresponding Author:** Sugam Krishna Singh, Department of Internal Medicine, MH Khadakwasla, Pune, India, E-mail: ak3.doc@gmail.com

edematous perifocal soft tissue planes along with right axillary lymphadenopathy. T1 weighted images showed multiple high signal intensity rims while T2 weighted images showed hyperintense signals with fluid collection. Culture and Sensitivity of the aspirated pus from the site grew Staphylococcus aureus, which was sensitive to erythromycin and clindamycin and moderately sensitive to vancomycin and amikacin.

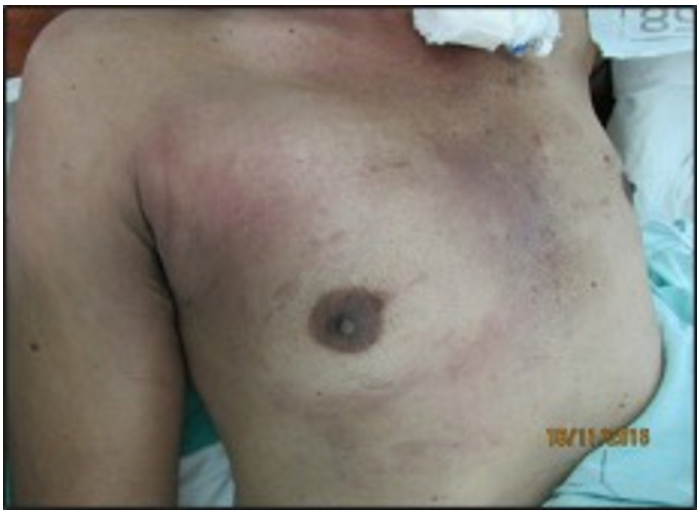

Figure 1. Erythematous Swelling Right chest

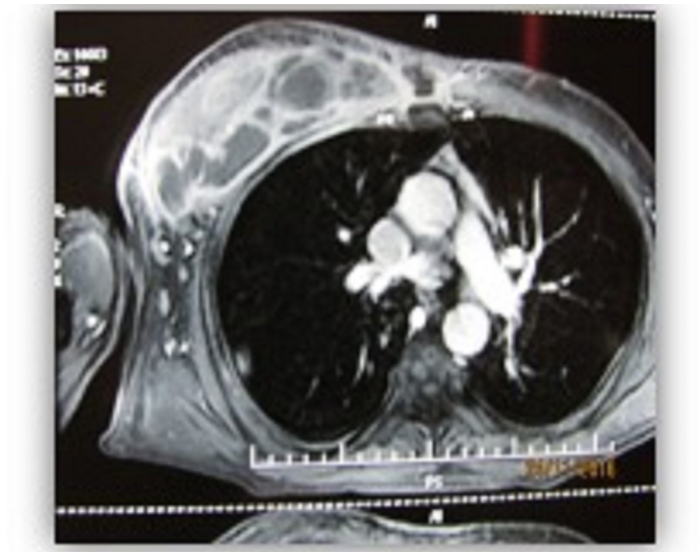

Figure 2. MRI Right Chest showing loculated necrotic collections in the right pectoral muscle

Based on clinical and radiological findings, patient was diagnosed as a case of tropical pyomyositis. He was managed with broad spectrum intravenous antibiotics (Meropenem, Vancomycin and Metronidazole) and analgesic supportive care. He underwent wound debridement under general anesthesia in operation theatre and 300 ml pus was drained. He was further managed by daily dressings. His blood sugar was taken care by basal bolus insulin. Gradually all his deranged parameters came within normal limits and his vitals became normal. He was discharged after 15 days once his wound started healing well. He has been on regular follow-up since then.

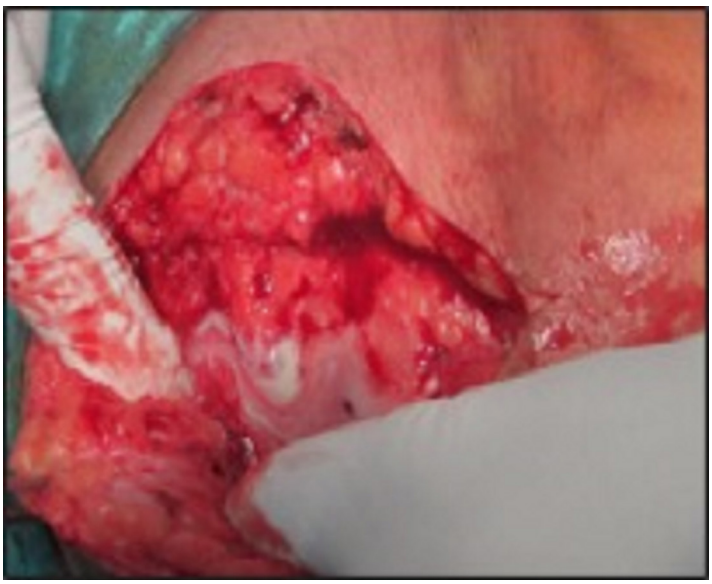

Figure 3. Intra-operative – pus

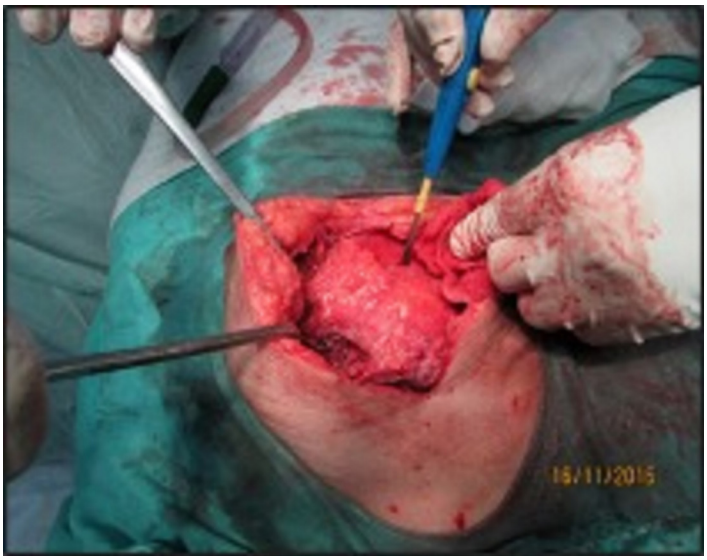

Figure 4. Intra-operative – necrotic pectoralis muscle

Discussion

Tropical Pyomyositis was first described by Scriba in 1885 who quoted it as endemic disease of tropics [2]. Commonest causative organism is Staphylococcus aureus [3] and the disease is found in all age group, maximum between 10-40 years with preponderance in males and immunocompromised states. Common sites affected being quadriceps, glutei, pectoralis major, serratus anterior, biceps, iliopsoas, gastrocnemius, abdominal and spinal muscles [3,4]. It is found to have a seasonal peak during monsoon [5]. Mortality ranges from 0.5 - 2% despite advances in diagnosis and treatment [6,7].

Microbiology [3,8]	Staph. aureus (90%)	Rest 10 % includes
		Streptococcus (group B,C)
		Pneumococcus
		Neisseria
		Hemophilus aeromonas
		Serratia
		Yersinia
		Pseudomonas
		Klebsiella

Risk factors	Trivial trauma and cut [9]
	Vigorous exercise [9]
	Nutritional deficiencies(unproven) (10)
	Infection [10]
	Immunocompromised states [3]
	Intravenous drug abuse [11,12]

Trauma facilitates hematogenous access of the organism as well as facilitates nutritional requirement in the form of iron from myoglobin. Small hematoma and surrounding damage following trauma may provide a favourable site for binding pathogenic bacteria and devitalized tissue might also impede the host immune response. There is inadequate T-cell response in host against staphylococcus. Microscopy generally shows edematous separation of muscle fibers, patchy myocytolysis, inter-fiber accumulation of lymphocytes & plasma cells and suppuration with bacteria & polymorphonuclear leucocytes [13]. Abscesses are generally solitary but in up to 40% cases may have multifocal sites especially in immunocompromised state.

Commonest clinical presentation progresses through three stages [14].

1. Suppurative stage	2. Invasive stage	3. Late stage (complication)
Sub-acute onset	Fever	Dissemination
Painful firm swelling	2nd-3rd week	Bacteremia, septicemia, septic shock ARF
Erythema +/-	High fever	Metastatic abscesses
Woody consistency	Pronounced systemic symptoms	
	Tense muscle	
	Needle aspiration may yield pus	

Atypical presentations could be acute presentation with high grade fever and chills or may be restricted to local symptoms only. Rare presentation include features of Toxic shock syndrome(TSS) [15]. Sometimes patient may present with pyrexia of unknown origin (PUO) when the invasive stage get prolonged. Rare presentation can be of acute abdomen, spinal cord compression or compartment syndrome. A mistaken for cervicobrachial neuralgia is made usually when it gets localised to neck muscles [16-18].

Differential Diagnosis [10]	• PUO	• Cellulitis
	• Muscle contusion, hematoma	• Deep Venous • Thrombosis
	• Septic arthritis	• Leptospirosis
	• Osteomyelitis	• Polymyositis

Early diagnosis and initiation of treatment is essential to prevent morbidity and mortality. Pus for culture and sensitivity and muscle biopsy are gold standard investigations for diagnosis. Lab investigations may show anemia, leukocytosis, eosinophilia and rise in acute phase reactant. Muscle enzymes- aldolase, CPK, aminotransferase, LDH may increase depending on the stage [19,20].Underlying immunocompromised state may be diagnosed only during such presentations. Blood culture has low positivity in diagnosis [21,22]. USG abdomen may show inflamed muscle with pus collection [23]. Computed Tomography/ MRI may show loculated necrotic collections with diffusely edematous perifocal soft tissue planes along with draining lymphadenopathy [23-25].

Aggressive treatment strategy with specific broad-spectrum parenteral antibiotics covering staphylococcus/other causative organisms continued until systemic as well as local signs of sepsis are controlled along with surgical drainage if required forms the main stay of management.

Antibiotics recommended [26-28]

• Parenteral antistaphylococcal ß-lactamase resistant penicillin (cloxacillin 1-2g q6h)
• Penicillin if susceptible staph. Infection
• 1st generation cephalosporins (cefazolin) if allergic to penicillin
• For MRSA, vancomycin 15mg/kg (<1g) slow iv q12h
• If intermediate sensitivity to vancomycin, Linezolid or dalfopristine- quinapristine derivatives
• For Grp A streptococcus- crystalline penicillin
• Gram negative bacilli- gentamicin 5-6mg/kg/d with cephalosporin
• Anaerobic infection- metronidazole (20-30mg/kg/d) iv or PO TDS
• Immunocompromised patient- broad spectrum Gram positive plus gram negative plus anaerobic cover
• Secondary metastases - 4-6wks iv antibiotics or till symptoms subside

Elimination of nasal carriage in patients with previous history pyomyositis or staph bacteremia is recommended. Topical mupirocin nasal formulations or systemic therapy with Rifampicin 600 mg/day or Cloxacillin 500mg / 6 hourly for 10 days can be administered.

Conclusion

Our patient being a young male living in tropics with known immunocompromised state (Diabetes) presented with pyomyositis involving right pectoral muscle, was managed with broad spectrum antibiotic cover and surgical drainage. Awareness of tropical pyomyositis is wanting. Common risk factors should be kept in mind especially immunosuppressive state. Insistent therapy by open debridement must be carried out subsequent to confirming the presence of pus by USG/CT/MRI. Early antibiotic initiation is pivotal in therapy, and surgical intervention, when required should not be deferred.

Conflict of interests
The authors declare that they have no competing interests.

Financial Disclosure
The financial support no have.

Patient informed consent
Patient consent form was taken from all patients.

References

1. Chauhan S, Jain S, Varma S, Chauhan S. Tropical pyomyositis (myositis tropicans): current perspective. Postgrad Med J. 2004;80:267–70.

2. Scriba J. Beitrang zur, Aetiologie der myositis acuta. Deutsche Zeit Chir. 1885;22:497–502.

3. Christin L, Sarosi GA. Pyomyositis in North America: case reports and review. Clin Infect Dis Off Publ Infect Dis Soc Am. 1992;15:668–77.

4. Ashken MH, Cotton RE. Tropical skeletal muscle abscesses (pyomyositis tropicans). Br J Surg. 1963;50:846–52.

5. Singh SB, Singh VP, Gupta S, et al. Tropical myositis. A clinical immunological and histopathological study. J Assoc Physicians India. 1989;37:561–3.

6. Horn CV, Master S. Pyomyositis tropicans in Uganda. East Afr Med J. 1968;45:463–71.

7. Chiedozi LC. Pyomyositis. Review of 205 cases in 112 patients. Am J Surg. 1979;137:255–9.

8. Sarubbi FA, Gafford GD, Bishop DR. Gram-negative bacterial pyomyositis: unique case and review. Rev Infect Dis. 1989;11:789–92.

9. Hall RL, Callaghan JJ, Moloney E, Martinez S, Harrelson JM. Pyomyositis in a temperate climate. Presentation, diagnosis, and treatment. J Bone Joint Surg Am. 1990;72:1240–4.

10. Tropical pyomyositis (myositis tropicans): current perspective | Postgraduate Medical Journal [Internet]. [cited 2019 Nov 25]. Available from: https://pmj.bmj.com/content/80/943/267

11. Crossley M. Temperate pyomyositis in an injecting drug misuser. A difficult diagnosis in a difficult patient. Emerg Med J. 2003;20:299–300.

12. Ebright JR, Pieper B. Skin and soft tissue infections in injection drug users. Infect Dis Clin North Am. 2002;16:697–712.

13. Taylor JF, Templeton AC, Henderson B. Pyomyositis. A clinico-pathological study based on 19 autopsy cases, Mulago Hospital 1964-1968. East Afr Med J. 1970;47:493–501.

14. Chukawama CL. Pyomyositis. Am J Surg1979;137:255–9.

15. Immerman RP, Greenman RL. Toxic shock syndrome associated with pyomysitis caused by a strain of Staph aureus that does not produce toxic shock syndrome toxin. J Infect Dis.1987;156:505–7.

16. Brik R, Braun J, Bialik V, et al. Non-tropical pyomyositis in children--with report of severe neurological complications. Acta Paediatr Scand. 1989;78:331–4.

17. Aynaci O, Onder C, Kalaycioglu A. Anterior tibial compartment syndrome due to the pyomyositis in a patient with rheumatoid arthritis. A case report. Jt Bone Spine Rev Rhum. 2003;70:77–9.

18. Flory P, Brocq O, Euller-Ziegler L, et al. Pyomyositis: cervical localization. J Rheumatol. 1993;20:1411–3.

19. Gupta B, Khanna SK, Sharma BK. Pyomyositis. J Assoc Physicians India. 1980;28:91–4.

20. Meena AK, Rajashekar S, Reddy JJ, et al. Pyomyositis - clinical and MRI characteristics report of three cases. Neurol India. 1999;47:324–6.

21. Gambhir IS, Singh DS, Gupta SS, et al. Tropical pyomyositis in India: a clinico-histopathological study. J Trop Med Hyg. 1992;95:42–6.

22. Brown JD, Wheeler B. Pyomyositis. Report of 18 cases in Hawaii. Arch Intern Med. 1984;144:1749–51.

23. Trusen A, Beissert M, Schultz G, et al. . Ultrasound and MRI features of pyomyositis in children. Eur Radiol. 2003;13:1050–5.

24. Schumacher TM, Genant HK, Korobkin M, et al. Computed tomography. Its use in space-occupying lesions of the musculoskeletal system. J Bone Joint Surg Am. 1978;60:600–7.

25. Soler R, Rodríguez E, Aguilera C, et al. Magnetic resonance imaging of pyomyositis in 43 cases. Eur J Radiol. 2000;35:59–64.

26. Robert L, Reresiewiscz, Parosenet J. Staphylococcal infections. In: Fauci AS, Braunwald E, Martin JB, et al, eds. Harrison's principles of internal medicine. 15th Ed. New York: McGraw-Hill, 2001;1:889–900.

27. Weasels MR. Streptococcal infections. In: Fauci AS, Braunwald E, Martin JB, et al, editors. Harrison's principles of internal medicine. 15th Ed. New York: McGraw Hill, 2001;1:901–9.

28. Hudson IR. The efficacy of intranasal mupirocin in the prevention of staphylococcal infections: a review of recent experience. J Hosp Infect. 1994;27:81–98.