Tropical pyomyositis (pyomyositis tropicans) in a child: a case report and review of the literature

MavaYakubu*[1], Yakubu A. Mela[1], Adetutu O. Joseph[2]

Abstract

Background: Tropical pyomyositis is a disease commonly seen in the tropics; it is characterized by suppuration within the skeletal muscles. Presentation is commonly as a single abscess but multiple abscesses could occur. The disease is not commonly seen in children less than 2 years of age.
Methods: This is a presentation of an 18 months old child with tropical pyomyositis to make physicians aware of the possibility of tropical pyomyositis in a case of a child presenting with fever, inability to walk, pains and swellings in the limbs.
Results: The child responded well to antibiotics and drainage of abscesses.
Conclusion: Early diagnosis can be lifesaving for this condition. Effective treatments usually result in excellent prognosis.

Keywords: Tropical pyomyositis, Limbs, Pains, Swellings, Child.

Highland Med Res J 2014;14(2):107-109

Introduction

Tropical pyomyositis (TP) or pyomyositistropicans is a disease characteristically common in tropical countries. [1]Scriba in 1885 described this entity for the first time. [2] Since then many cases have been reported from various parts of the world. [3]. Various terms such as; tropical pyomyositis, myositis tropicans, tropical skeletal muscle abscess and tropical myositis have been used to describe this disorder. Similarly because of the increased recognition in the temperate regions, it is also referred to as; non tropical myositis, infectious myositis, spontenous bacterial myositis. [4]Recent reports indicated that up to 75% cases of TP in temperate regions are associated with immunodeficiency state. [5]Tropical pyomyositis has been described in an injection drug users. [6]

The Commonly isolated organism from the abscesses is *Staphylococcus aureus*.[4,7]Other organisms include *Streptococcus, pneumococcus, Neiseria, haemophilus, salmonella, Escherichia coli, yersinia, klebsiella* and *mycobacterium*. Nutritional deficiencies, viral and parasitic infections, abnormal immune system, intravenous drug abusers are speculated in the aetiopathogenesis of this condition.[6,8]

[1]Department of Paediatrics Bingham University Teaching Hospital Jos [2]Department of Family Medicine Bingham University Teaching Hospital Jos

All correspondences to:
Dr Mava Yakubu
Department of Paediatrics Bingham University Teaching Hospital Jos
E-mail: yakubumava@gmail.com

Case Report

Master YD, an 18 months old male child was referred from Nyanjo general hospital in Abuja on 7th October 2013 and presented to us on the 9th October 2013. Patient was referred on account of poor response to antibiotics for suspected septicaemia. The patient was also reported to have had blood transfusion. At presentation the child had fever, vomiting, cough, abdominal distention and inability to walk because of pains and swellings in the limbs. There was no history of convulsions; or history suggestive of sickle cell disease.

Figure 1. Bilateral thigh swelling in 18 months old child

There was no history of trauma, he had normal developmental milestone and has completed his immunization according to the national program on immunization. His nutritional history was adequate, he is the 6th child in a monogamous setting, other children were alive and well.

Examination revealed an acutely ill child febrile with temperature of 38.5°C, severely pale, moderately dehydrated; his weight was 11kg (100% of expected for his age). Other anthropometric measurements were within normal limit. He was mildly dyspneic with crepitations on both lungs. There was bilateral swollen thigh, it was warm, tender and both thighs were warm, tender and fluctuant (Figure 1).

Our working diagnosis was septicaemia complicated with pneumonia and muscle abscess, and possibly osteomyelitis. Investigations carried out include; fine needle aspiration of both thighs which yielded frank pus, microscopy and culture of the aspirates; showed numerous white blood cells mainly neutrophils with few red blood cells. Culture of the sample yielded no bacteria growth; the blood culture was also negative. Complete blood count was 10×10^9/L with neutrophils 75%, lymphocytes 23%, monocytes 2%, the packed cell volume was 18% and the ESR was 75mm/hour. The electrolytes, urea and creatinine were essentially normal. Patient's genotype was AA with negative HIV serology. X-ray of both thighs showed no evidence of osteomyelitis but the chest X-ray was in keeping with bronchopneumonia.

The patient had incision and drainage about 550mls of pus was drained and the cavity was packed with sterile gauge. Patient had two weeks course of cefriaxone at 100mg/kg/day, gentamycin at 5mg/kg/day and metronidazole at 7mg/kg/dose. Patient was also on daily dressing of the wound. Patient responded well to treatment and was discharged. He was followed up for two months in outpatient clinic during which he was seen to be perfectly well with normal activities.

Discussion

Pyomyositis initially viewed as a tropical disease, [1] is not limited to the tropics. In temperate climate the disease is usually not considered in the differential diagnosis of patients presenting with musculoskeletal pain. [5] In these regions physician's lack of familiarity with the disease may be a factor in its being overlooked. This might be the case of the index patient, as the physicians managing the child before he was referred to our facility might have overlooked the complaint by the mother about the child's inability to walk due to pains in the limbs. The incidence of TP differs from region to region, [8]however in tropical countries the peak incidence was reported at 2-5 years of age. [9]Our18 month old patient closely falls within this age range. The disease is rare in the first year of life but some cases have been reported as young as 2-3 months of life. [9]

The index patient is a male, which agrees well with almost all reported series that male preponderance is the rule. [1,3] The reason for male preponderance is not clear but could be related to their predisposition to trauma, since trauma has been associated as a predisposing factor in TP. [4, 6,] Nevertheless our patient had no history of trauma.

The clinical features and the microbiological profiles of TP are similar regardless of age and geographical distribution. [1,10]The natural history of the disease has been divided into three stages: The early invasive stage is characterized by pain and swelling of the involved muscles, this was the case of our patient but was not detected in the hospital where he was first seen. Failure to detect early swelling is possible because the muscle abscess is contained by the overlying fascia, therefore local erythema and heat may be minimal until days or even weeks after symptom onset when the infection might have spread to subcutenous tissues with eventual systemic manifestations. [1,]The second stage is the suppurative stage; this was the stage our patient presented at our institution. The presentation at this stage usually includes fever, malaise, leucocytosis, elevated ESR, anaemia and abscess formation. Approximately 90% of TP present during this stage.[1]The last stage is the septicaemic stage where metastatic abscesses and abscess complications occur. [1] Since our patient had bronchopneumonia at presentation, we therefore conclude that the patient presented at this stage also. This collaborated well with the report that pneumonia among others could be a complication of TP.[1] Some reports indicated multiple abscesses in 60% of patient with pyomyositis in the temperate regions. [10]

Laboratory findings in pyomyositis are nonspecific. Leucocytosis with left shift and increased ESR are the most helpful findings.[1]Our patient had leucocytosis and elevated ESR. The blood culture in our patient was negative; this is consistent with other reports. Culture of the pus aspirated from the index patient who had been on antibiotics did not yield any positive growth either; this is a common finding as reported by some authors. [1,7]This contrast sharply with another report where culture of the pus was positive in 70-85% of patients.[4]Commonly cultured organisms are, *Staphylococcus aureus* regardless of age group, this is followed by *Streptococcus pyogenes*. [3,10]In immunocompromised patients a range of other organisms have been cultured, gram negative enteric organisms, anaerobes, and fungi. [9] Other predisposing factors to the development of pyomyositis includes; trauma, HIV infection, malignancy, vigorous exercise and drug abuse via injections. [5,6,]None of these was found in the index patient. Since none of those risk factors was

found in this patient the source of infection might have been an occult bacteraemia as reported by Bickels et al.[9]

Imaging studies are of paramount importance in the diagnosis of TP. Plain radiograph to exclude osteomyelitis are useful, in the case of our patient this was normal. Ultrasound could have been useful; this was not done in the index patient because of financial constraint. The thigh is most commonly affected; as demonstrated in our patient, with bilateral thigh swelling. The bilateral thigh involvement in our patient contrast with commonly reported cases of unilateral involvement, [10]though there has been a report of multiple site involvement. [9] If the condition is diagnosed early, then early antibiotic therapy may be successful without surgical drainage. Our patient presented at our facility late, hence the need for surgical drainage and antibiotic therapy to which he responded well.

In conclusion TP is relatively rare, in patients who do not have predisposing factors it should be suspected and investigated. Physicians should also remember that it is a great masquerader; therefore early diagnosis can be lifesaving for this condition. Effective treatment usually result in excellent prognosis especially when treated in the early stage of the disease.

Acknowledgment
We are grateful to the parents and the nursing staff for their full cooperation in the management of this patient.

Conflict of Interest
None declared in this work.

References

1. Ali I, Rashdan I. Pyomyositis: A case report and literature review. Hospital Physician 1999; 39-42
2. Scriba J, BeitrangZ. Aetiologic der myositis acuta. DeutchZeitChir. 1885; 22: 497-502
3. Chauhan S, Jain S, Verma S, Chauhan SS. Tropical pyomyositis (myositis tropican): Current perspective. Postgrad Med J 2004; 80: 267-270
4. Shepherd JJ. Tropical myositis, is it an entity and what is its cause? Lancet 1983; ii : 1240- 1242
5. Hassain A, Reis ED, Soundararajan K et al. None tropical pyomyositis: Analysis of eight patients in an urban centre. Am Surg 2000; 66: 1064-1066
6. Crossley M. Temperate pyomyositis in an injecting drug users. A difficult diagnosis in a difficult patient. Emerg Med J. 2003; 20: 299-300
7. John C, Emmanuel A.A, Lohfa BC: Pyomyositis, in Emmanuel AA, Stephen WB, Kokila L, Benedict N, Dan P. Paediatric Surgery: A Comprehensive Text for Africa and Developing Countries 2010 Vol. 1,120-123.
8. Idoko JA, Oyeyinka GO, Giassuddin AS etal. Neutrophil cell cycle and migration inhibition study in Nigerain patients with tropical pyomyositis. J Infect. 1987; 15: 33-37
9. Bickels J, Ben-Sira L, Kessler A, Wientroub S. Primary pyomyositis. J Bone Joint Surg Am. 2002; 84: 2277-2286.
10. GubbayAG, Isaacs D. Pyomyositis in children. Paediatr Infect Dis J 2000; 19: 1009-1012