TROPICAL MYOSITIS: AN UNDERDIAGNOSED ENTITY?

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SUMMARY

Four cases of tropical myositis seen over a period of four months at the Penang General Hospital are reported here. All were young local residents in whom large amounts of pus were found deep within skeletal muscles without an obvious aetiological factor.

INTRODUCTION

Tropical myositis is a condition characterised by the presence of suppurative lesions within skeletal muscles. There has been little agreement regarding the terminology – various names used include purulent tropical myositis, tropical pyomyositis, tropical skeletal muscle abscess, spontaneous bacterial myositis or epidemic abscess. The earliest anecdotal reports of patients presenting both skeletal muscle abscesses were those from France and Brazil more than 100 years ago. The earliest documentation of a series of cases comes from Japan in 1904.[1] Since then, skeletal muscle abscesses have been described worldwide, with a high incidence in New Guinea and Uganda, and a distribution mainly within the tropics although it has also been reported from temperate countries.[2]

G.S. Robin described 12 cases of tropical myositis from Peninsular Malaysia in 1961, 11 of which were in expatriates, only one being in a local Malay man.[3] In 1963, M. H. Ashken and R.E. Cotton presented 32 cases of "pyomyositis tropicans" seen among expatriate Gurkha military personnel in Malaya.[4] Since then, there has been little documentation of this condition from this country especially among local inhabitants.

CASE REPORTS

We present four cases of skeletal muscle abscesses seen over a four-month period in the Penang General Hospital.

Case 1

A 15-year-old Indian girl presented with ten days of fever with chills, cough productive of yellow sputum, and pain in the right calf. Physical examination revealed a mild pyrexia and woody hard tenderness in the belly of her right calf. No other physical signs were detected. Sputum culture showed normal throat flora and blood culture produced no growth. The TWC 12.3 x 10^9/1 with 53% polymorphs. ESR was 87 mm/hr. The temperature rose over the third to the sixth day of

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admission and there was an increase in the pain and tenderness in the right calf. Radiography revealed no abnormality. Serum CPK and SGOT were within normal limits. Muscle aspiration was attempted without success.

She was started on antibiotics (Penicillin G and Gentamycin) but the pyrexia persisted. On the tenth day of admission, she was subjected to surgery whereupon a deep-seated muscle abscess was found in the gastrocnemius muscle; 150 ml of pus was drained. Ten days later a second Incision and Drainage was done about 10 cm proximal to the first and 100 ml of pus was drained from the head of the gastrocnemius muscle. Culture of the pus in both instances grew *Staphylococcus aureus.* She improved following the second Incision and Drainage and has remained well.

Case 2

A 13-year-old Indian girl was admitted to the Orthopaedic Unit with a history of pain in the left calf after some games. On examination she was febrile with tenderness over the left calf. Her TWC was 20 x 10^9/1 with 50% polymorphs and her ESR was 60 mm/hr. She was suspected to have deep vein thrombosis due to the calf tenderness and a positive Homan's sign, and referred to the Medical Unit. She was given Cloxacillin but no anticoagulants. Blood cultures were sterile. Her fever persisted, and on the nineteenth day she was operated on and a deep-seated muscle abscess was discovered in the belly of the gastrocnemius. 200 ml of pus was drained which when cultured grew *Staphylococcus aureus.* Within two days she became apyrexial and was discharged soon after.

Case 3

A 27-year-old Malay man was referred to the Penang General Hospital for pain in his right thigh and calf for one week, associated with a low grade fever. One week prior to this, he had suffered from an abscess in his left gluteal region which had burst spontaneously. On examination, he was febrile, with swelling and tenderness of the right thigh and calf. Homan's sign was positive, the superficial veins were dilated and pitting oedema of the ankle was present. The TWC was 22 x 10^9/1 with 87% polymorphs. Blood cultures were sterile. He was started on Cefotaxime and Gentamicin and a diagnosis of deep vein thrombosis was entertained. His temperature rose further and the right inguinal lymph nodes were palpable on the seventh day. Surgical exploration was carried out on the eighth day and about 300 ml of pus was evacuated. Culture of the pus revealed *Staphylococcus aureus.* He improved and was discharged on the twentieth day.

Case 4

A 21-year-old Indian male presented with progressive pain over the right buttock and left scapular area over a period of three weeks. There was continuous fever in the first week after which he had a remittent fever with spikes in the afternoons and evenings. On examination, he was found to have a warm tender swelling over the right gluteus maximus muscle and a similar swelling in the latissimus dorsi at the lower end of the scapula. Joint movements were normal.

The TWC was 24 x 10^9/1 with 88% polymorphs and ESR 125 mm/hour. Muscle aspiration was attempted and 1 ml of creamy pus obtained. He was started on Cloxacillin and surgical drainage was done. 80 ml of pus was drained from the gluteus maximus and 200 ml from the latissimus dorsi muscle. Pus culture grew *Staphylococcus aureus.* He became apyrexial from the third post operation day and was discharged soon after.

DISCUSSION

In all the four cases presented here, there was a delay in coming to the correct diagnosis. The reasons for this may be manifold. Firstly, the authors feel that there is general lack of awareness regarding this condition. Secondly, the diagnosis has almost always to be made on clinical grounds alone and there is no diagnostic laboratory test. Thirdly, tropical myositis, if affecting the calf muscle, was often confused with deep vein thrombosis as Homan's sign was invariably positive and there tended to be a mild pitting oedema of the foot.

Simple haematological indices were useful in the clinical diagnosis. All four cases showed a leucocytosis out of proportion to their pyrexia varying from 12.3 x 10^9/l to 24.3 x 10^9/l, while the ESR was elevated in three of them. ESR was not done in the fourth (Table I).

In all four cases presented here, blood cultures were sterile but pus cultures grew *Staphylococcus aureus* – coagulase positive. This is in accordance with the work of previous authors who have isolated *Staphylococcus aureus* from about 80% of their cases.[2] It also shows that there is no bacteraemia at the time of clinical presentation.

The authors would like to point out the low rate of success with attempted muscle aspiration. Doctors are sometimes reluctant to subject the patient to exploratory surgery if they get a dry tap on muscle aspiration. We feel the reason for this dry tap is due to the nature of the pus which is thick and creamy and therefore not easily aspirated. Moreover, the abscesses lie within rather than between muscle bellies, thus making them more difficult to aspirate. (Fig. 1)

A review of the literature often cites trauma as causative factor. Ashken and Cotten[4] in 1963 reviewing 32 cases among Gurkha army recruits cite repetitive minor trauma as an important aetiological factor in tropical myositis. In the four cases, only one gave a history of undue exertion or trauma which could be related to the onset of the disease.

TABLE I
STATISTICS AND RESULTS OF THE TESTS CARRIED OUT

Case	Age	Sex*	Race	Pyrexia (av. 1st 24hrs)	TWC (cells/l)	ESR (mm/hr)
1	15	F	Indian	37.1°C	12.3 x 10^9	87
2	13	F	Indian	37.6°C	20.0 x 10^9	60
3	27	M	Malay	37.0°C	22.0 x 10^9	–
4	21	M	Indian	37.6°C	24.3 x 10^9	125

* F – female; M – male.

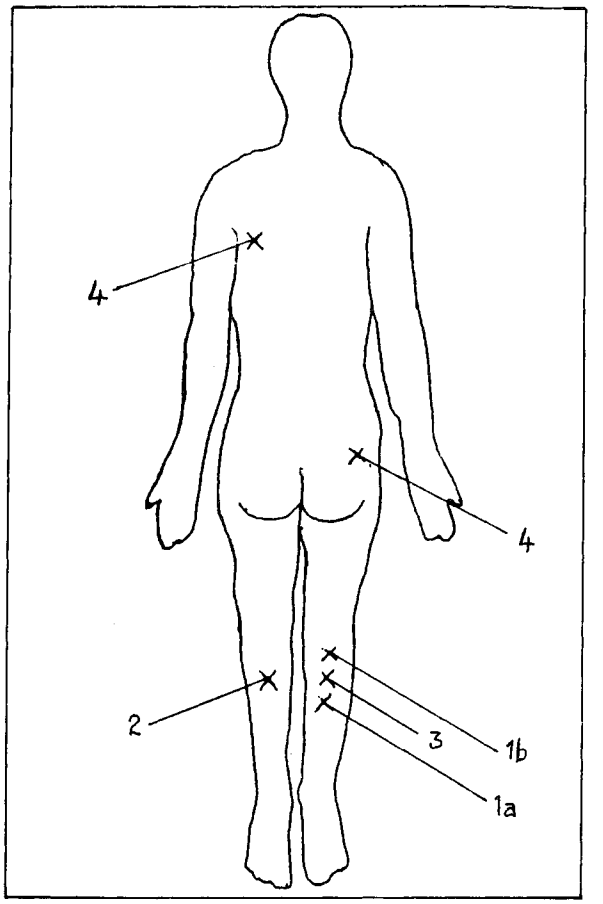

Fig. 1 Site of muscle abscesses in the four cases presented.

The proper treatment of this condition requires an I & D to evacuate the pus from within the muscles. Antibiotics used alone are quite ineffective but can be used as a complement to surgery. Muscle aspiration, as mentioned earlier is difficult with low yields and proper drainage is not possible.

REFERENCES

1 Scriba J. Beitragnzur aetiologie der myositis acuta. *Deut Zeit Chir* 1985; 22; 497.

2 Shepherd J J. Tropical myositis: Is it an entity and what is its cause? *Lancet* 1983; II; 1240.

3 Robin G C. Tropical myositis in Malaya. *J Trop Med Hyg* 1961; 64: 288.

4 Ashken M H, Cotton R E. Tropical skeletal muscle abscesses *(Pyomyositis tropicans). Brit J Surg* 1963; 50: 846