Tropical pyomyositis*
*Piomiosite tropical**

Angélica de Oliveira Gonçalves[1] Nurimar Conceição Fernandes[2]

Abstract: Tropical pyomyositis is a bacterial infection of the skeletal muscle. It is more frequent in men, and is characterized by local swelling and tenderness. Staphylococcus aureus is the most common agent. We report the case of a male patient with pyomyositis of the gastrocnemius muscle secondary to pyoderma gangrenosum in the right lower limb. Ultrasonography showed a fluid collection permeating muscular bundles. Surgical drainage and prolonged antibiotic therapy led to complete resolution of the infection.
Keywords: Anti-bacterial agents; Soft tissue infections; Myositis

***Resumo**: Piomiosite tropical é infecção bacteriana do músculo esquelético, mais freqüente em homens e que se apresenta com edema e hiperestesia na área afetada. Staphylococcus aureus é o agente prevalente. É relatado caso de homem com piomiosite de músculo gastrocnêmio, secundário a pioderma gangrenoso em membro inferior direito. Ultra-sonografia demonstrou coleção de líquido permeando feixes musculares. A drenagem cirúrgica e antibioticoterapia prolongada levaram à resolução do quadro.*
Palavras-chave: Agentes antibacterianos; Infecções dos tecidos moles; Miosite

Infectious myositis is a rare disease caused by organisms invading the skeletal muscle by contiguity or hematogenous spread from a distant focus.

Tropical pyomyositis (TP) is a bacterial infection of the muscle; it is more common in the tropics. Previous history of trauma or intense exercise in the region affected is present in 20-50% of the cases.[1-3] *Diabetes mellitus*,[4] alcoholic liver disease, rheumatoid arthritis, SLE, malnutrition,[4] blood disorders,[5] neutropenia, immunosupressors, and HIV infection are also reported.[1,6] Tropical pyomyositis has three clinical stages: the first one is characterized by a subacute onset with fever, local enlargement, erythema, pain, induration or woody consistency. The second stage, occurring between 10 and 21 days after the first stage, is characterized by tenderness, local enlargement, low fever, absence of erythema, and presence of pus. In the third stage, signs and symptoms of sepsis, erythema, intense tenderness and fluctuation may occur. The large muscles of the lower limbs and trunk are the most frequently affected. Leukocytosis, increased levels of muscle enzymes,[1] C-reactive protein,[5] IgE and ESR;[1,4] and eosinophilia may occur. Rhabdomyolysis with myoglobinuria and renal failure may occasionally be present.[1] *S. aureus* accounts for 95% of the cases in tropical regions. Group A streptococcus (1-5%), Groups B, C and G streptococcus, and *S. pneumoniae* are also reported. Enterobacteriaceae (*E. coli, Klebsiella oxytoca, Serratia marcescens, M. morganii, Citrobacter freundii, Salmonella* spp), *Y. enterocolitica, N. gonorrhoeae, H. influenzae, Aeromonas hydrophila* and anaerobic bacteria are rarely reported. The CT scan showed muscle enlargement and fluid collection, and the ultrasonography (USG) showed muscle enlargement and a hypoechoic collection. CT scan or magnetic resonance imaging (MRI) are the best imaging tests for an early diagnosis. Surgical drainage (open or percutaneous) is essential. Beta-lactamase-resistant penicillin is used as initial antibiotic therapy because of the predominance of *S. aureus*. Antibiotic (ATB) change is based on cultures and antibiotic sensitivity tests.[1] If untreated, the infection progresses with distant abscesses and complications such as pneumonia, osteomyelitis, lung abscess, shock/sepsis, compartment syndrome, renal failure, empyema, and venous thrombosis.[2,7]

Considering diagnostic/therapeutic difficulties of TP and its potential severity, we report the only case of the disease occurring in the HUCFF dermatology ward in 25 years.

Male patient, 59 years old, with renal carcinoma, who had undergone right nephrectomy and adrenalectomy. By this time, papulopustular lesions appeared in his lower limbs, progressing to painful ulcerations. He was diagnosed with pyoderma gangrenosum, and prednisone 60mg/day was started. When he was admitted to the hospital, he had ulcers in the lower third of the left leg and on the sacral region. In the lower third of the

Received on July 07, 2003.
Approved by the Consultive Council and accepted for publication on December 08, 2004.
* Work done at the Service of Dermatology, Hospital Universitário Clementino Fraga Filho - Universidade Federal do Rio de Janeiro / UFRJ, Rio de Janeiro (RJ), Brazil.

[1] Reading for masters degree at the Service of Dermatology, Hospital Universitário Clementino Fraga Filho - Universidade Federal do Rio de Janeiro / UFRJ, Rio de Janeiro (RJ), Brazil.
[2] Adjunct Professor of Dermatology, Faculdade de Medicina - Universidade Federal do Rio de Janeiro / UFRJ, Rio de Janeiro (RJ), Brazil.

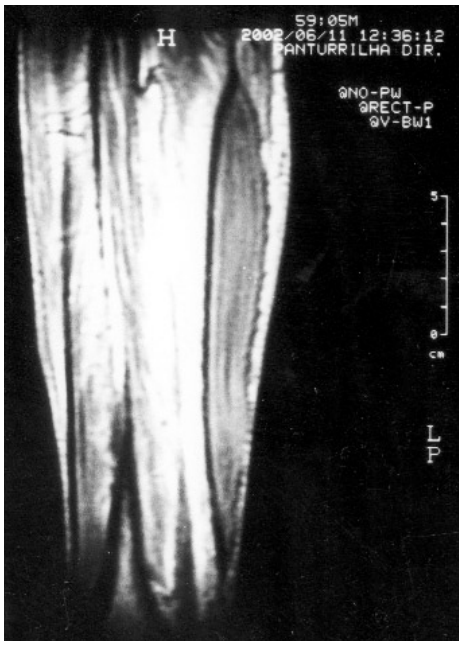

FIGURE 1: Magnetic resonance imaging of the right calf, sagittal section: large and extensive encapsulated fusiform collection, affecting the posterior muscles of the right leg

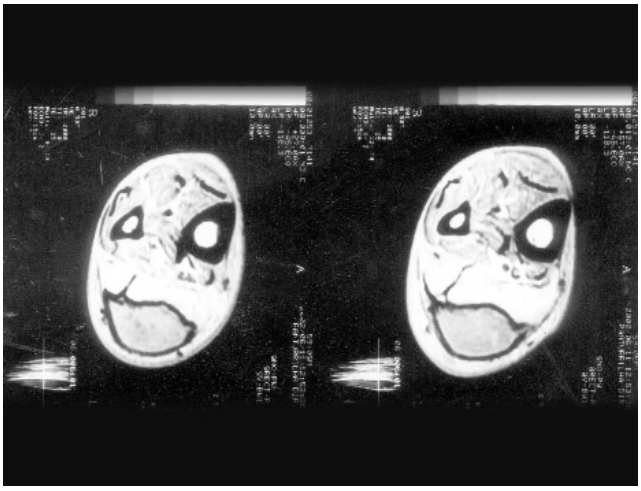

FIGURE 2: Magnetic resonance imaging of the right calf, cross section: large and extensive encapsulated fusiform collection, affecting the posterior muscles of the right leg

right calf, an area with edema and heat (suggestive of cellulitis) associated with ulceration and exposure of the Achilles' tendon could be observed. Amoxicillin/clavulanate 3g/day was started, and prednisone 60mg/day was maintained. After 14 days on antibiotics, he had shown small signs of improvement, so purulent specimen was collected for culture, which grew *Enterobacter cloacae, C. freundii, E. coli* and *M. morganii*. The antibiotics were changed to ciprofloxacin (800mg/day, IV). An ultrasonography of the right calf was performed and showed hypoechogenicity of the medial gastrocnemius muscle. The MRI scan (Figures 1A and 1B) showed a large and extensive encapsulated fusiform collection, suggesting pyomyositis. Upon confirmation of the diagnosis, clindamycin (2.4g/day, orally) was associated to ciprofloxacin, due to the growth of multiple bacteria in the culture. Laboratory tests showed 32,600 leukocytes, 11% bands, and ESR of 30. Percutaneous drainage was performed; since there were no signs of improvement in the control CT scan, surgical exploration was chosen. Due to the growth of *S. aureus* in the surgical specimen, oxacillin was used for 21 days, with clinical and CT scan improvement. The patient was discharged on cephalexin which was maintained until CT scan was normal (two months). The ulcerations healed and the pyomyositis resolved. Prednisone was discontinued.

In this case, the infection resulted from contiguous lesions of pyoderma gangrenosum, and immunodepression (renal tumor and corticosteroid therapy) was a predisposing factor. TP is clinically similar to cellulitis, so the diagnosis was confirmed by imaging tests (USG, CT, MRI), and isolation of the organisms. Since TP is easily confused with other infectious/inflammatory processes (cellulitis, osteomyelitis, thrombophebitis, panniculitis, systemic diseases, and muscle rupture),[1] a high level of diagnostic suspicion is necessary. ❑

REFERENCES

1. Swartz MN. Myositis. In: Mandell GL, Bennett JE, Dolin R. Mandell D, Bennett´s. Principles and Practice of Infectious Diseases. Philadelphia: Churchill Livingstone; 2000. p. 1058 - 60.
2. Marques GC, Mauro Filho GL, Valiatti M, et al. Piomiosite tropical: estudo retrospectivo de 27 casos. Rev Bras Reumatol. 1995;35:193-200.
3. Jayoussi R, Bialik V, Eyal A, Shehadeh N, Etzioni A. Pyomyositis caused by vigorous exercise in a boy. Acta Paediatr. 1995; 84:226-7.
4. Gomez-Reino JJ, Aznar JJ, Pablos JL, Diaz-Gonzales F, Laffon A. Nontropical pyomyositis in adults. Semin Arthritis Rheum. 1994; 23:396-405.
5. Hayashi T,nozaki M, Nonaka Y, et al. Pyomyositis as a focus of infection in hematological disorders: report of 3 cases. Int J Hematol. 2003; 77:171-4.
6. Siqueira NG, Siqueira CMVM. Piomiosite tropical. Rev Col Bras Cir. 1998; 25:205-7.
7. Malhotra P, Singh S, Sud A, Kumari S. Tropical pyomiositis: experience of a tertiary care hospital in north-west India. J Assoc Physicians India. 2000; 48:1057-9.
8. Husain S, Singh N. Pyomyositis associated with bacillary angiomatosis in patient with HIV infection. Infection. 2002; 30:50-3.
9. Marques GC, Valiatti M, Pereira ER, Barbieri V, Mauro Filho GL. Piomiosite tropical de localização cervical em pacientes com lúpus eritematoso sistêmico. Rev Bras Reumatol. 1996; 36:47-50.
10. Waites MD, Roberts JV, Scott-Coombbes D, Al-Hamali S. Cyclic neutropenia and pyomyositis: a rare cause of overwhelming sepsis. Ann R Coll Surg Engl. 2002; 84:26-8.

MAILING ADDRESS:
Angélica de Oliveira Gonçalves
Rua Gruçaí, 506
21020-250 - Rio de Janeiro - RJ
Tel.: +55 21 2564-0541
E-mail: angelicaoliver@yahoo.com