

Chronic osteomyelitis as a diagnostic pitfall in the practice of the dermatologist: a case report

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ABSTRACT

In the clinical practice of Dermatology, it is not uncommon to encounter challenging situations that are difficult to characterize and may lead to misdiagnosis. Skin conditions with similar presentations are included here and, in this case, it is of utmost importance that the dermatologist combines information from the medical history, physical examination and complementary tests in order to exclude conditions with worse prognosis and that require more aggressive action than other benign conditions and/or with less negative impact.

Keywords: Osteomyelitis, Misdiagnosis, Differential diagnosis, Skin injuries

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INTRODUCTION

Solitary skin injuries, with a chronic and indolent course, can present a diagnostic challenge to the dermatologist. It is essential to investigate the etiology for the correct approach and treatment, avoiding sequelae. Cases of osteomyelitis may have cutaneous manifestations overlying the affected bone area, initially resembling inflammatory nodules that evolve with fistula formation and secretion drainage¹. This presentation may lead to diagnostic delay because it mimics other conditions with which the dermatologist is more familiar. A case report and subsequent discussion are presented below to highlight the importance of collecting a good history associated with a physical examination to guide the diagnosis in these situations.

CASE REPORT

A 47-year-old male patient, employed in construction and with no previous comorbidities came to the Dermatology Outpatient Clinic of the São José do Rio Preto Medical School (FAMERP) complaining of a lesion on the posterior aspect of the right thigh that had been onset for five years and was unable to associate a triggering factor. He observed progressive growth, with periods of improvement and worsening, progressive increase in the intensity of local pain symptoms and drainage of intermittent purulent secretion.

Throughout the evolution, he reports having taken some courses of antibiotic therapy with only partial improvement. In the last three months, he had observed a worsening of the lesion.

On examination, a 9x4.5 cm erythematous-violaceous tumor was observed on the posterior aspect of the right thigh, infiltrated, with an exulcerated spot, without signs of secondary infection and a brownish halo around it (Figure 1). No other changes on physical examination.

The diagnostic hypotheses of paracoccidioidomycosis, tegumentary leishmaniasis, sporotrichosis, chromomycosis, dermatofibrosarcoma protuberans, squamous cell carcinoma, and amelanotic melanoma were made, and biopsies of skin fragments were requested with cultures for bacteria, mycobacteria, and fungi.



Figure 1. Frontal view of lesion on the posterior aspect of the right thigh.

At follow-up, the patient returned after one month and the lesion had a moist aspect and two drainage orifices in the lateral and central center, the first of which, and of larger dimensions, had drainage of a small amount of pyoderous secretion (Figures 2 and 3).



Figure 2. Superior view of a lesion on the posterior aspect of the right thigh showing an erythematous-violaceous plaque with slight scaling on the lower border and one of the drainage holes on the central lateral portion.



Figure 3. Approximate view of the lesion on the posterior aspect of the right thigh showing two opening points with the exit of a small amount of pyoderous secretion.

Pathology of the skin biopsy showed acanthosis and mild spongiosis in the epidermis, neovascularization, fibrosis and foci of infiltrate predominantly perivascular lymphocytic and extending to the septa of superficial adipose tissue (septal panniculitis). Absence of granulomatous reaction in the material. Fungal and acid-fast bacillus tests were negative.

Culture for bacteria, mycobacteria and fungi resulted negative.

Due to the change in the appearance of the injury, a new investigation of factors preceding the onset of the injury was performed. The patient reported that three years before the onset of the lesion he had been in a car accident with an open fracture of the right femur and had undergone surgical correction in an outpatient clinic.

Based on the new information and examination of the lesion, the diagnostic hypothesis was changed to cutaneous fistula secondary to a chronic osteomyelitis process after surgical repair of a femoral fracture.

The patient underwent imaging examinations for confirmation. Radiography of the right thigh showed a fixator with metallic osteosynthesis. Magnetic resonance imaging demonstrated the presence of a fistulous tract in the posterior region of the right thigh, starting at about 16.4 cm from the hip joint next to the metal synthesis material, extending inferiorly and posteriorly until its exteriorization through the skin in a tract estimated at about 5.8 cm with peripheral enhancement after intravenous injection of paramagnetic contrast medium. No image suggestive of detectable intraosseous collections was observed (Figure 4).

Once the hypothesis of cutaneous fistula was confirmed after femur surgical repair, the patient was referred to the Orthopedics team for case evaluation and approach.

In the following months, the patient was lost to follow-up at the Dermatology outpatient clinic. On consulting the medical records, a surgical approach was performed by the Orthopedics team, with the removal of material for the synthesis of a previous fracture.

DISCUSSION

Chronic osteomyelitis is a persistent bone infection with an estimated incidence of four to 64% in open fractures and one to two percent in joint replacements². According to Lew and Waldvogel, it can be classified according to etiology into three categories: hematogenous dissemination, contiguous focus related to trauma, surgery, prosthetic material and adjacent soft tissues, and associated with vascular insufficiency, usually secondary to Diabetes Mellitus³.

It is characterized by an indolent infectious picture of bone tissue with the long-term presence of microorganisms, bone sequestration, low-grade inflammation and fistula formation². The latter presents the external opening in the skin of a sinuous path from the site of bone infection with intermittent drainage of secretion. The skin surface overlying the affected bone, where the opening of the fistulous tract is observed, is erythematous, firm in consistency, edematous and painful^{1,4}.

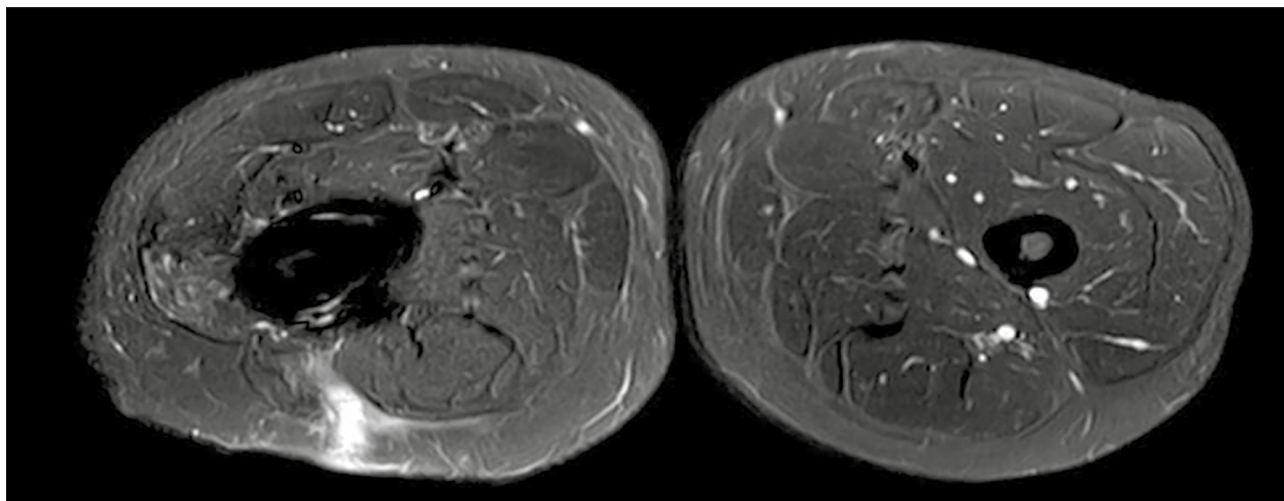


Figure 4. lower limb magnetic resonance image showing fistulous tract on the posterior aspect of the right thigh with contrast enhancement.

In this context, the presence of the skin lesion described above may be a reason for consultation in a Dermatology service, as occurred in the case reported above. It is up to the dermatologist to take a thorough anamnesis and associate it with the physical examination findings in order to construct the diagnostic hypothesis and differential diagnoses, and it is of fundamental importance to exclude cutaneous neoplasms, which may have a similar presentation and have their prognosis affected by a delay in diagnosis.

Hakamifard et al reported the case of an elderly man with a nine-month history of secretory ulcer over erythematous plaque on the calcaneus after trauma with a flowering thorn. Initially treated unsuccessfully as osteomyelitis, a diagnosis of amelanotic melanoma was made after a biopsy of the lesion⁵.

It is also worth pointing out the importance of the evaluation of chronic ulcers and fistulas by the dermatologist due to the risk of malignancy of the lesion, especially with transformation to squamous cell carcinoma⁶. By a still unknown mechanism and of infrequent occurrence, signs such as increased drainage of secretion through the fistula and exophytic growth of the lesion may be indicative of malignant transformation⁶.

CONCLUSION

Osteomyelitis is a bone tissue infection with increasing incidence in recent decades, mainly

associated with the increased use of prosthetic materials in orthopedic surgeries⁴. In cases of chronification, a fistulous communication tract may appear between the bone site of infection and the skin surface, where an enduring plaque with a drainage point for secretion can be observed.

In the face of such a presentation, there may be confusion and difficulty in the approach due to the similarity with other injuries. It is up to the dermatologist to carry out a careful and detailed investigation to exclude cutaneous pathologies of worse prognosis and to give the correct diagnosis.

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Contribuição dos autores

MCBJ and **GG** responsible for the initial consultation, data collection, and physical examination of the patient cited in the case report. **AMS** responsible for the biopsy collection after the initial consultation to be sent for histopathological analysis. **JMA** and **PMB** responsible for the patient's return care and imaging exams request. **GG** responsible for discussing the imaging exam at the Radiology sector of Hospital de Base de São José do Rio Preto and image capture of the magnetic resonance exam to include in the construction of this case report. **MCBJ, GG, AMS, JMA** and **PMB** jointly responsible for the construction of this case report. **JRA** involved in the theoretical guidance and supervision of the construction of this case report.

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None.

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