

## A Case of Giant Cell Tumor of the Fibula

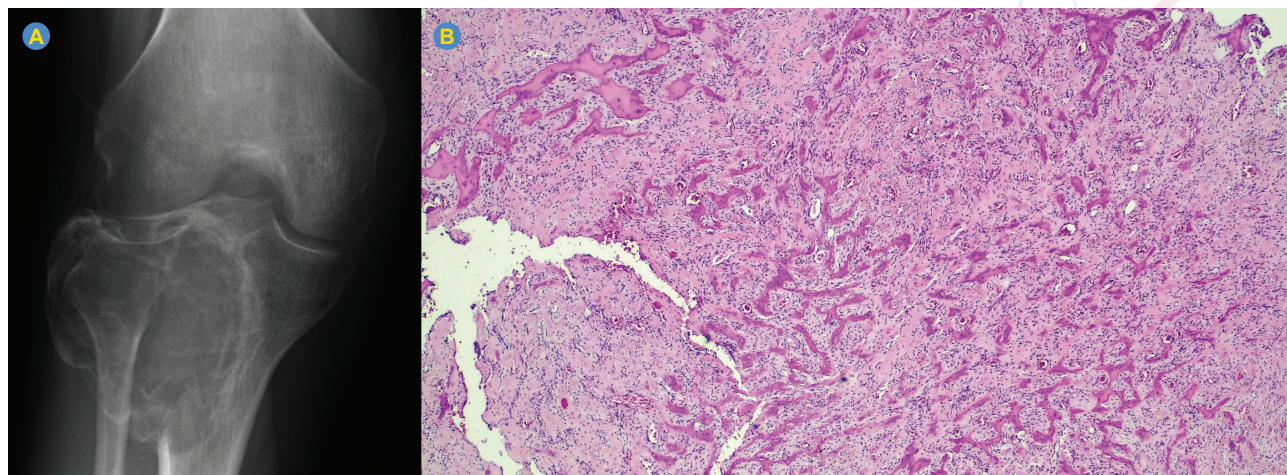
### Um Caso de Tumor de Células Gigantes do Perónio

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Acta Med Port (In Press) • <https://doi.org/10.20344/amp.21067>

**Keywords:** Denosumab/therapeutic use; Fibula; Giant Cell Tumor of Bone/drug therapy; Giant Cell Tumor of Bone/pathology

**Palavras-chave:** Denosumab/uso terapêutico; Fibula; Tumor de Células Gigantes do Osso/tratamento farmacológico; Tumor de Células Gigantes do Osso/patologia



**Figure 1 – (A)** Giant cell tumour of the fibula. The X-ray, taken before treatment with denosumab, shows a lytic and trabeculated lesion in the epiphysis of the distal fibula. **(B)** Denosumab-treated giant cell tumor of the bone with the formation of woven bone, between the woven bone there is a proliferation of a fibrous tissue (hematoxylin-eosin 40x)

A 21-year-old male presented to the emergency department with right knee pain and swelling. A diagnosis of giant cell tumor of the bone (GCT) was made on magnetic resonance imaging. The patient started neoadjuvant treatment with denosumab, after which he underwent surgery.

The GCT is a locally aggressive neoplasm, representing 5% of primary bone tumors. It usually occurs between the ages of 20 and 45 and affects the epiphysis of long bones.<sup>1</sup> Radiologically, it is usually lytic, eccentric with trabeculation and has a multilobulated appearance (Fig. 1A).<sup>2</sup>

Denosumab is a human monoclonal antibody against the receptor activator of nuclear factor- $\kappa$ B-ligand that inhibits osteoclastic activity, thus reducing osteolysis, and osteoclast-like cell (OLC) activity (Fig. 1B).<sup>3</sup> The use of neoadjuvant denosumab helps convert an inoperable GCT to a tumor amenable to surgery.<sup>4</sup>

The histological changes induced by denosumab treatment include ossification, fibrosis, and marked decrease/disappearance of OLC. Recognizing these changes is important as they mimic benign fibro-osseous lesions or osteosarcoma.<sup>4</sup>

#### AUTHOR CONTRIBUTIONS

JMG: Study design, image collection and writing of the manuscript.

RCO: Study design, writing and critical review of the manuscript.

JC: Image collection and critical review of the manuscript.

All authors approved the final version to be published.

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**Recebido/Received:** 06/12/2023 - **Aceite/Accepted:** 16/01/2024 - **Publicado Online/Published Online:** 22/05/2024

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## PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in 2013.

## DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

## PATIENT CONSENT

Obtained.

## COMPETING INTERESTS

The authors have declared that no competing interests exist.

## FUNDING SOURCES

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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