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Case Report

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TCG: ABOUT RECONSTRUCTION OF THE LOWER EXTREMITY OF THE TIBIA AFTER TUMOR EXCISION

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ABSTRACT

This work illustrates the classic clinical radio presentations of TCGs and atypical TCGs by location, age or progressive nature, as well as the different therapeutic modalities.

KEYWORDS: TCG – Tibia.

INTRODUCTION

Giant cell tumor (GCT) is a primary osteolytic tumor, often benign, but known to be locally aggressive.

The treatment of this tumor is almost exclusively surgical but not unambiguous; it often poses a therapeutic problem of reconstruction after resection, particularly for certain aggressive forms with joint invasion.

We report an observation of a highly aggressive TCG of the tibial pilon which posed a reconstruction problem after a necessary wide resection.

CASE REPORT AND RESULT

We report the case of a recurrence of a giant cell tumor of the lower end of the tibia in a 43-year-old woman who underwent one year of curettage-filling with acrylic cement (fig1). A resection of the tumor removing the lower third of the tibia was carried out ; the residual bone 'gap' was reconstructed by an autograft using an island fibula to which was associated an intramedullary nail driven into the talus up to the calcaneus with bipolar locking. (Fig2), the length of the nail was planned in preoperatively to maintain tibial length.

The evolution was good with consolidation and progressive hypertrophy of the fibula, in an autonomous and satisfied woman. (Fig3).

Despite the arthrodesis of the ankle, we noted mobility at the level of the Chopart joint of valuable contribution. (Fig4) with insulating leg skeletons.'

The aim of this work is to describe this alternative in the reconstruction after resection of tumors of the lower extremity of the tibia.

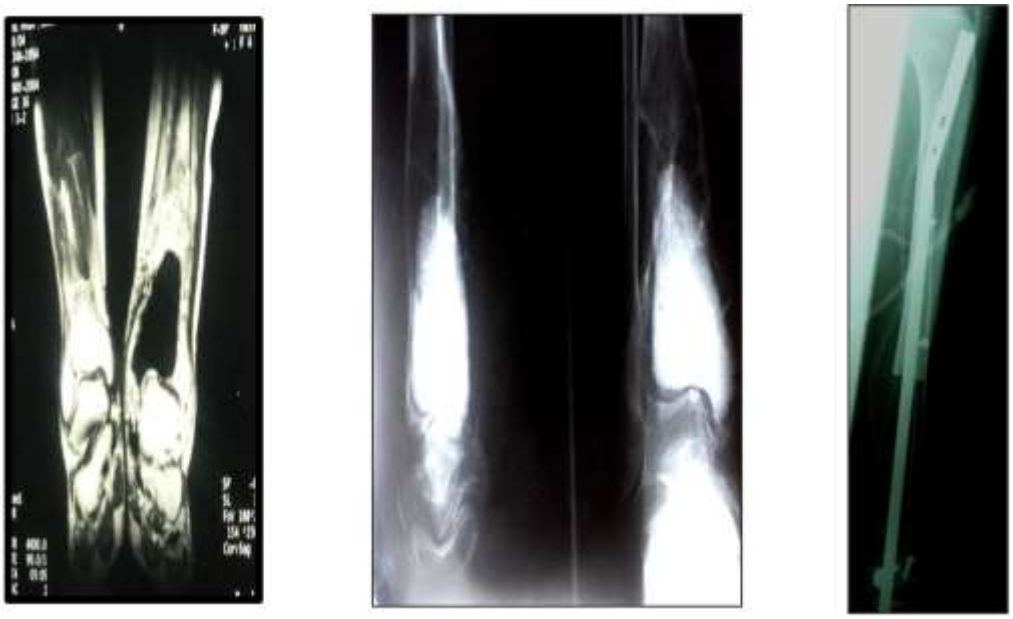

Fig. 1A: T2-weighted frontal MRI B: Standard radio: recurrence.

Fig. 2: Postoperative functional result.

Fig. 3: Consolidation and hypertrophy of the fibula.

DISCUSSION

Giant cell tumor (GCT) is a primary osteolytic tumor that is often benign. Its usual site is metaphyseal epiphyseal, it often affects young adults.[1] Its location at the ankle and foot is rare, not exceeding 4% of all GCTs.[2]

The usual treatment of GCT is classically based on intralesional curettage associated with bone grafting, more or less adjuvant treatment with the aim of reducing the recurrence rate.[3]

The problem of bone reconstruction after resection concerns certain aggressive forms with joint invasion, particularly at the ankle level.

Curettage and arthrodesis are the treatment of choice for aggressive GCT of the distal end of the tibia.

The choice of the graft allowing a solid arthrodesis has concerned surgeons during the reconstruction of the bone defect after resection.

Saglik et al,[4] performs an ankle arthrodesis with fibular autograft. Campanacci and others,[5] associate this autograft with an allograft, based on studies which have shown that the addition of allograft with a vascularized fibula improves mechanical strength compared to an autograft by vascular fibula alone.[6,7]

There remains the problem of synthesizing support during reconstruction. K. Economopoulos MD,[8] used for this purpose a screwed plate taking the tibia and the talus by bridging a spacer with a screw between the internal malleolus and the talus. Laitinen,[7] stabilized his arthrodesis with an external fixator.

Moore et all,[9] had the idea of using a retrograde ECM as a synthesis to support the allograft.

The ankle prosthesis remains an attractive and possible alternative for aggressive TCG of the lower end of the tibia. Certainly, this alternative allows functional recovery but in the medium term morbidity and functional deterioration are inevitable.[10]

In the case presented after the resection of the tumor we found ourselves faced with a large loss of bone substance, which led us to reconstruct and arthrodesize the ankle with an island fibula, stabilized by an intramedullary nail, different from the technique retrograde described by Moore, in fact anterograde we passed the nail through the talus to the calcaneus then we proceeded to a distal locking by two screws in the calcaneus itself, the length prepared preoperatively made it possible to have two isolating leg axes, this technique, according to the literature review has never been described, has given good results with a painless solid arthrodesis and without tumor recurrence and this thanks to a wide resection and a solid support assembly.

CONCLUSION

We describe an original technique for the treatment of an aggressive GCT of the lower end of the tibia which required a wide excision, the arthrodesis by a fibula graft was supported by an anterograde intramedullary nail locked in the calcaneus, this process exempted us from an amputation, a decision too difficult for a benign tumor in a young and active patient, and saved us from having to resort to a prosthesis whose longevity and morbidity limit its use.

Consent

The patients have given their informed consent for the case to be published.

Competing Interests

The authors declare no competing interest.

Authors 'Contributions

All authors have read and agreed to the final version of this manuscript and have equally contributed to its content and to the management of the manuscript.

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