



ORIGINAL ARTICLE

Surgical treatment of locally aggressive and malignant tumors of the proximal third of the tibia. Oncology results and functional evaluation[☆]



G.L. Farfalli, J.I. Albergo^{*}, M.A. Ayerza, D.L. Muscolo, L.A. Aponte-Tinao

Ortopedia y Traumatología, Sector de Ortopedia Oncológica y Trasplantes Óseos, Hospital Italiano de Buenos Aires, Buenos Aires, Argentina

Received 17 September 2013; accepted 19 November 2013

KEYWORDS

Fibula;
Sarcoma;
Block resection;
Posterolateral
ligament complex

Abstract

Introduction: Proximal fibula malignant and locally aggressive benign bone tumors are uncommon and usually treated by surgery. Bloc resection of the knee can compromise knee stability due to the resection of the posterolateral ligament complex.

Material and methods: We analyzed 28 consecutive patients treated for a proximal fibula bone tumor between 1980 and 2006 (osteosarcoma: 9, giant cell tumor: 9, Ewing sarcoma: 8 and chondrosarcoma: 2). Sixty-one percent were male and the median age was 21 years (range: 8–60). The mean follow-up was 86 months. The posterolateral complex was reinserted at tibial metaphyseal level. Patients were evaluated functionally using the Musculoskeletal Tumor Society scale (MSTS).

Results: Overall survival rate was 89%, local recurrence rate was 11%, and secondary amputation rate was 6% at 7 years of median follow-up. The average MSTS score was 93%. Five patients had neurological complications. No patient experienced subjective instability or vascular insufficiency.

Conclusions: Bloc resection of the proximal fibula for the treatment of aggressive or malignant primary bone tumors allowed us to obtain local tumor control, and overall survival rate for sarcomas of 89% at 7 years. The posterolateral ligament complex tibial reinsertion provided functional knee stability without major functional consequences in the medium term.

© 2013 SECOT. Published by Elsevier España, S.L. All rights reserved.

[☆] Please cite this article as: Farfalli GL, Albergo JI, Ayerza MA, Muscolo DL, Aponte-Tinao LA. Tratamiento quirúrgico de los tumores malignos y localmente agresivos del tercio proximal del peroné. Resultados oncológicos y evaluación funcional. Rev Esp Cir Ortop Traumatol. 2014;58:212–216.

^{*} Corresponding author.

E-mail address: Jose.albergo@hiba.org.ar (J.I. Albergo).

PALABRAS CLAVE

Peroné;
Sarcomas;
Resección en bloque;
Complejo
posterolateral

Tratamiento quirúrgico de los tumores malignos y localmente agresivos del tercio proximal del peroné. Resultados oncológicos y evaluación funcional

Resumen

Introducción: Los tumores óseos malignos o benignos localmente agresivos del tercio proximal del peroné son infrecuentes y generalmente su tratamiento es quirúrgico. Cuando se requiere una resección en bloque, la estabilidad de la rodilla puede comprometerse por afectación del complejo posterolateral.

Material y métodos: Se analizaron 28 pacientes operados de manera consecutiva por un tumor óseo en el tercio proximal de peroné entre los años 1980 y 2006 (osteosarcoma: 9, TCG: 9, sarcoma de Ewing: 8 y condrosarcoma: 2). El 61% eran varones y la edad media fue de 21 años (rango: 8–60). El seguimiento promedio fue de 86 meses. El complejo posterolateral fue reinsertado a nivel de la metafisis tibial. Los pacientes fueron evaluados funcionalmente con la escala *Musculoskeletal Tumor Society (MSTS)*.

Resultados: La supervivencia global fue del 89%, con un índice de recidiva local del 11% y un porcentaje de amputaciones secundarias del 6% a los 7 años de seguimiento promedio. El resultado promedio del MSTS fue del 93%. Cinco pacientes sufrieron secuelas neurológicas, 3 de tipo permanente. Ningún paciente sufrió inestabilidad subjetiva ni insuficiencia vascular.

Conclusiones: La resección en bloque del peroné proximal en el tratamiento de los tumores óseos agresivos o malignos depara un buen control local de la enfermedad y una supervivencia a los 7 años, en los casos malignos, del 89%. La re inserción del complejo posterolateral a nivel tibial supone una buena estabilidad de la rodilla, sin secuelas funcionales a largo plazo.

© 2013 SECOT. Publicado por Elsevier España, S.L. Todos los derechos reservados.

Introduction

Primary bone tumors in the fibula are infrequent, representing only 2.5% of all bone tumors, with osteosarcoma being the most prevalent.^{1–4} Anatomically, the proximal end of the fibula is closely related to the posterolateral ligamentous complex, as well as the vascular-nervous elements of the knee. The structures which comprise the posterolateral complex play an important stabilizing role (Fig. 1), preventing posterior translation, varus deviation and external rotation of the tibia.^{5,6} The treatment of locally aggressive or malignant tumors of the proximal end of the fibula requires extensive or radical resections, in order to obtain adequate postoperative margins. This may compromise knee stability, vascularization and innervation of the affected limb. The published literature includes reports of a fibular nerve palsy index ranging between 20 and 57%.^{2,7} The aim of this study was to analyze the clinical and oncological evolution, as well as the function and stability of the knee, following block resection of aggressive and malignant primary bone tumors located in the proximal end of the fibula (Fig. 2).

Materials and methods

We performed a retrospective search in our oncology database based on prospective criteria between October 1980 and March 2006. We identified a total of 56 patients with primary bone tumors of the fibula. Of these, 28 affected the proximal third, were malignant or locally aggressive benign tumors and were treated through surgical block resection, so we included them in our analysis. A total of 17 patients (61%) were male and the mean

age of the series at the time of diagnosis was 21 years (range: 4–60 years). The mean follow-up period was 86 months (range: 12–256 months) without any loss of patients. The surgical treatment performed in all cases involved block resection of the proximal fibula. A total of 11 cases underwent Malawer type I resections (marginal resections), whilst another 17 cases underwent type II resections (broad intracompartmental).⁷ The vascular-nervous and ligamentous elements were preserved, provided that there was no tumor involvement thereof. In cases where the posterolateral ligamentous complex was preserved, it was reinserted in the lateral side of the proximal tibial metaphysis using staples. Fixation was performed with the knee at 30° flexion.⁸

All patients were evaluated before surgery through knee radiographs in anteroposterior and lateral projections, and through computed tomography and magnetic resonance imaging from 1992. A preoperative puncture biopsy was performed in all cases and the diagnosis was confirmed by histopathological examination. The 28 tumors in the proximal third of the fibula included 9 osteosarcomas, 9 giant cell tumors, 8 Ewing sarcomas and 2 chondrosarcomas. The 19 bone sarcomas were staged according to the Enneking classification, with the following results: 1 grade 1A, 1 grade 1B and 17 grade 2B. For giant cell tumors we used the classification described by Campanacci, with 4 being grade 2 and 5 grade 3.^{9,10} A total of 8 patients diagnosed with osteosarcoma and 6 with Ewing sarcoma received preoperative and postoperative chemotherapy.

The use of an extension splint was indicated for 3 weeks and passive flexion and extension exercises were started from the second postoperative day. Therapy progressed to active movement from the third week and progressive load from the sixth.

Download English Version:

<https://daneshyari.com/en/article/4087129>

Download Persian Version:

<https://daneshyari.com/article/4087129>

[Daneshyari.com](https://daneshyari.com)