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Limb salvage surgery for malignant tumors in proximal tibia involving fibula

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A retrospective study of patients with malignant tumors in the proximal tibia involving the fibula was carried out to evaluate the effect of limb salvage surgery. The oncologic results, complications, and postoperative function were summarized.

Methods

Thirty-two patients were included in the study. There were 21 males and 11 females, with a mean age of 23.4 years old. The pathological diagnosis included 23 osteosarcomas, 5 chondrosarcomas, 1 malignant giant cell tumors, and 3 soft tissue sarcomas. During the operations, all patients had ligation of anterior tibial vessels, and 6 patients had resection and reconstruction of posterior tibial artery for direct tumor invasion or injury during resection. Among them, 3 patients had vessel anastomosis and 3 patients had vascular autograft with great saphenous vein. The common peroneal nerve in 4 patients and deep peroneal nerve in 5 patients were resected, respectively. The reconstruction methods included 25 endoprosthesis replacements, 5 allograft-prosthetic composite replacements, and 3 recycled tumor bearing bones.

Results

After a mean follow-up of 39.4 months, 6 patients (18.8%) had local recurrence, and the overall 5-year survival rate was 51.2%. Sixteen patients had no evidence of disease, fourteen patients were died of disease, and two were alive with disease. Variant complications occurred in 15 patients (46.9%), which included peroneal nerve palsy, ischemia of the lower leg, wound healing problem, deep infection and paraprosthesis fracture. The functional outcomes of a mean MSTS 93 score was 21.6 points (72%).

Conclusion

The indications of limb salvage surgery for malignant tumors in proximal tibia involving fibula should be restricted. Although complications encountered frequently, most patients have acceptable postoperative function.

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