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Vascularized fibular medialization for reconstruction of the tibial defects following tumor excision

Abed Al-Negery, Samir Kotb, M Serry El Saied and Nabil El Moghazy
Mansoura University, Egypt

Purpose: The purpose of this study was to evaluate the functional and oncologic results of fibular medialization when used along as a single-stage reconstructive technique after wide excision of malignant tumors of proximal, middle or distal tibia.

Methods: Between December 2010 and May 2015, 14 patients (6 males and 8 females) with primary malignant tumors of the tibia (8 proximal, 4 diaphyseal, 2 distal) were treated by wide excision. The mean age of the patients at the time of surgery was 23.2 years (11 to 38). The fibula was mobilized medially with its vascular pedicle to fill the defect. The average size of the defects reconstructed was 19.5 cm (18 to 22). Full weight bearing was achieved at 6.2 months (range: 4 to 10) postoperatively. Patients were evaluated functionally using the Musculoskeletal Tumor Society evaluation system.

Results: The mean follow-up period was 31.3 months (range: 17 to 54). The average time for complete union was 6.2 months (range: 4 to 10). At final follow up all patients had fully united grafts; 9 walked without aids. Chest metastases developed in one patient, superficial wound infection in one patient and leg length discrepancy in three patients. The mean Musculoskeletal Tumor Society Score was 23/30 points (76.5%). The minimum score was 40% and the maximum was 90%.

Conclusion: Ipsilateral pedicled vascularized fibular centralization or medialization is a durable reconstruction for tibial defects after wide excision of bone tumors with an acceptable functional outcome. Stable osteo-synthesis is the key to union.

Biography

Abed Al-Negery is a Medical Practitioner at Mansoura University Hospital and Abed Orthopedic Center, Egypt. He is a professional member of Egyptian Orthopaedic Association and Egyptian Oncology Association.

abed.elnegery@gmail.com

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