

Biological Reconstruction of Distal Tibia Giant Cell Tumor using “Kinabalu Ice Clasp”

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INTRODUCTION:

Distal tibia giant cell tumor presents with complex challenge in the limb salvage surgery using non-biological, biological or hybrid technique. Non-biological options like megaprosthesis are used to achieve limb function however there are concern about socioeconomic availability of the implant and longevity of the implant especially in younger patient. There are also options of biological reconstruction using combination of frozen autograft and free vascular fibula grafts. Frozen autograft can be achieved using liquid nitrogen to get mechanically strong and biologically weak bone graft, while free vascular fibula graft is mechanically weak but biologically strong. We would like to report a modification of the technique whereby the frozen autograft bone is split and later trim to clasp onto the vascularized graft as “Kinabalu ice clasp”.

REPORT:

We presented a case of biological reconstruction for right distal tibia giant cell tumor. The patient was 22 years old lady presented with swelling over right ankle for 2 months, progressive increasing in size and associated with pain on movement. On examination showed palpable firm mass over right ankle. Biopsy was done which confirmed the diagnosis of giant cell tumor of tibia bone. After 3 cycles of IV pamidronate and 4 doses of denosumab, proceeded for resection of distal tibia, reconstruction with vascularized fibular graft and biological recycled bone autograft via liquid nitrogen. Patient was discharged home with non-weight bearing crutches ambulation post operation.



Figure 1: Intraoperative biological reconstruction of “Kinabalu ice clasp”



Figure 2: Pre and post operation x ray

CONCLUSION:

Biological reconstruction of distal tibia using “Kinabalu ice clasp” is a viable, cost-effective choice especially in younger patient.

REFERENCES:

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