

A Case Report of Distal Right Femur Osteosarcoma Treated With Recycled Frozen Autograft Using Cryotherapy (Liquid Nitrogen)

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INTRODUCTION:

Osteosarcoma is the commonest bone sarcoma which often achieve long term survival in two-thirds of the patients with local resection and early initiation of modern chemotherapy regime.^[1] Following the local resection, surgeons need to reconstruct large bone defect and several options are available including endoprostheses, allograft, composite arthroplasty and distraction osteogenesis.^[2] Cryosurgery technique which described in previous study as early as year 1962.^[5] This technique was modified by Tsuchiya et al. using liquid nitrogen for massive bone frozen and recycling.^[3]

REPORT:

A 15-year-old girl presented with right thigh swelling associated with fever, night pain, loss of appetite and sudden weight loss, since September 2022. She was diagnosed right distal femur osteosarcoma with right lung and lymph node metastasis in November 2022.

On examination, distal third right thigh swelling, measured 15cm x 10cm, hard in consistency, ill-defined border, fixed to underlying structures with no skin changes. Her right hip and knee range of movement are full without neurological deficit.

She was allergic to EURAMOS protocol, hence, her chemotherapy was changed to ST JUDE-os99 protocol and completed 6 weeks prior to surgery. She underwent wide resection and bi-plating distal third right femur with frozen autograft treated by liquid nitrogen in July 2023. Post operatively, she recovered well and discharged within 2 weeks. She was able to ambulate on wheelchair upon discharge.

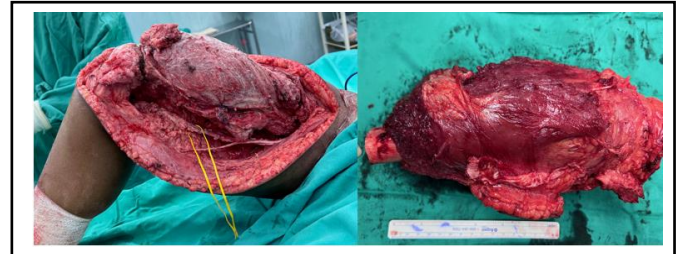


Figure 1: Pre-Resected Osteosarcoma Right Femur

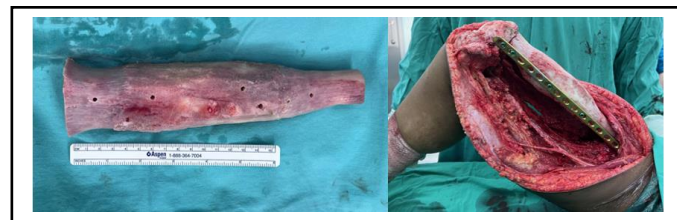


Figure 2: Post-Resected and plating of Right Femur

CONCLUSION:

Recycled frozen autograft provides a satisfactory functional outcome in limb salvage surgery and no local recurrence is reported

REFERENCES:

1. Bläsius et al.,2022. Surgical Treatment of Bone Sarcoma. *Cancers*, 14(11),2694.
2. Igarashi et al.,2014. The long-term outcome following the use of frozen autograft treated with liquid nitrogen in the management of bone and soft-tissue sarcomas. *96-B(4)*,555–561.
3. Tsuchiya et al., 2005. Reconstruction using an autograft containing tumour treated by liquid nitrogen. *The Journal of Bone and Joint Surgery*,87-B(2),218–225.