

## JOINT SALVAGE USING SANDWICH TECHNIQUE FOR DISTAL FEMUR GIANT CELL TUMOR

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**Introduction:** Giant cell tumors are one of the common benign bone tumor in the epiphysis and metaphysis of long bones. It is locally aggressive with tendency of local recurrence. Thus, surgical management for peri-articular lesion is uniquely challenging. Joint salvage options offer a better functional outcome and less morbidity compared to wide resection and reconstruction. The exothermic reaction of the bone cement is associated with degeneration of articular cartilage in subchondral region. Thus, the Sandwich technique is preferred, it provides a safeguard network by providing an insulating layer between the bone cement and the articular cartilage.

**Discussion:** A 56-year-old male presented with complaint of left knee pain for the past 3 months, in the absence of trauma. It was associated with night pain and pain on weight bear in which patient required to use walking aid. Clinical examination only revealed generalized tenderness over the left knee. Plain radiograph showed lytic lesion over the epi-metaphyseal region of distal femur, thinning of cortex, narrow zone of transition, no periosteal reaction and no cortical breakage. Magnetic resonance imaging (MRI) revealed a well-defined heterogeneous lesion over the distal femur with high signal intensity in T2 weighted image. Core biopsy confirmed the diagnosis of giant cell tumor. Extended curettage with Sandwich technique was performed. Extended curettage with high-speed burr was performed and hydrogen peroxide was used as chemical adjuvant therapy. Allograft was packed adjacent to the subarticular surface. A layer of gel foam was laid over the allograft and the remaining cavity was packed with bone cement for structural support and adjuvant therapy. Surgery was uneventful.

**Conclusion:** The Sandwich technique provide joint salvage option and good functional outcome. It allows the maintains of the articular congruity through restitution of subchondral anatomy, meanwhile allowing the utilization of bone cement for providing both adjuvant therapy and structural property.