

**FC-149****Expandable prosthesis in reconstructing distal femoral defects following tumor resection: evaluation of a two-stage procedure****W. Ebeid, W. Abousenna***Cairo University, Cairo, Egypt*

Reconstruction following resection of distal femoral tumours in children is a real challenge. Limb salvage is possible using an expandable prosthesis that will aim at achieving equal lower limb length at maturity. However, this prosthesis is expensive and custom made for the patient. This may require 4 to 6 weeks before it is available for implantation. Delay in surgical resection or altering the chemotherapy protocol would affect the patient's oncological outcome.

Thus to avoid this delay we did a 2 stage procedure for some patients with specific circumstances. These included patients referred to our institution after having their preoperative chemotherapy, patients not financially capable for covering the expenses of an expandable prosthesis at the time of surgery and patients with poor prognostic outcome (multicentric, chest metastases at presentation).

The aim of this study was to evaluate the advantages, disadvantages and functional outcome of patients having an expandable prosthesis as a second stage of reconstruction.

19 patients suffering from distal femoral osteosarcoma were treated by preoperative chemotherapy followed by resection and reconstruction using a cement spacer. 10 of them had removal of the spacer and implantation of an expandable prosthesis after they finished their postoperative chemotherapy. They were 7 males and 3 females with an average age 10 years (range 7 to 14). The average time between the 2 procedures was 12 months (range 6 to 19). All the prosthesis had semi invasive mechanisms for expansion.

Of the remaining 9 patients, 2 had rotationplasties, 3 had hip disarticulation (2 due to local recurrence and 1 due to infection) and 4 developed chest metastases. After a minimum follow up of 2 yrs the average functional outcome of the patients who had 2 stage reconstruction was 24 (18 to 28). 1 patient developed infection and was treated by hip disarticulation.

Performing 2 stage reconstruction allowed us to perform surgical resection in the appropriate time without delaying chemotherapy. It also allowed us to implant this expensive prosthesis in the ten patients who had more favourable oncological outcome. Moreover, performing 2 stages did not affect the final functional outcome.