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SADDLE PROSTHESIS- USE AND FUNCTIONAL OUTCOME IN PELVIC TUMOR SURGERY

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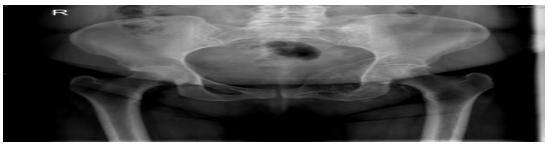
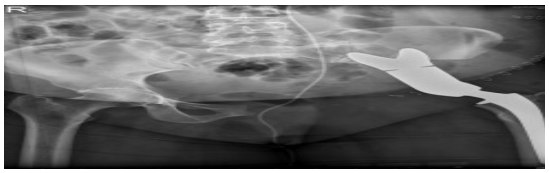
Abstract : Saddle prosthesis are widely used for the treatment of pelvic malignancies more as a limb salvage procedure. Though literature reviews show poor long term functional outcome it is associated with a short operation time, rapid recovery, and early mobilization as compared to other techniques.
Keyword :saddle prosthesis, megaprosthesis



preperative Xray

post operative xrays



post operative xrays

CASE DISCUSSION: 35 year old lady presented with the complaints of left hip pain for the past 6 years which was initially mild and worsened over the past 5 months. Initially she was treated by local doctors with analgesics and physiotherapy. There was minimal improvement in symptoms and so she went to a higher centre for treatment where during radiological evaluation she was found to have a tumor in her left pelvic region. She was evaluated for the same and on biopsy was found to have a left pelvic chondrosarcoma for which she was referred to a higher centre for surgery and further treatment. She had no history of radiation or symptoms suggestive of metastasis. Her activities of daily living were not restricted due to the malignancy.

Her examination was unremarkable except for a mild anterior joint line tenderness and restriction of abduction of the left hip as compared to the opposite side. She underwent left hemipelvectomy and megaprosthesis using a saddle prosthesis Post operatively she was monitored in Surgical ICU for a day and was shifted to the ward once she was stabilised. She was treated in the ward with regular dressings and antibiotics. Delayed suture removal was performed .She was advised bed rest initially with in bed mobilization exercises and was planned to gradually mobilized with the help of a walker .There were no post operative wound infection or neurological weakness. Her surgical biopsy revealed a pelvic chondrosarcoma but with margins free of tumor and hence no further radiotherapy or chemotherapy was planned for her as advised by Medical Oncologists.

DISCUSSION :

Limb salvage surgery is the treatment of choice for malignant tumours of the extremities. But for pelvic tumours the use of limb salvage surgery remains controversial due to the higher risk of haemorrhage, nerve and visceral damage, and infection. Although several reconstructive procedures have been reported, including pelvic prosthesis arthroplasty, allograft reconstruction (with or without a total hip prosthesis), arthrodesis, and pseudarthrosis, a ‘gold standard’ has yet to be established due to poor postoperative function and high complication rates.

The saddle prosthesis,originally developed for revision of failed total hip arthroplasty, has been used as a reconstruction device for large bone defects following resection of periacetabular malignant tumours.

The indications for a saddle prosthesis use commonly are :

1. pelvic tumors localized in the periacetabular region with clear surgical margins,
2.no signs of metastatic disease,
3. sufficient residual bone stock of the ilium after planned resection for creation of a stable notch for the saddle, and
4. otherwise good physical status and life expectancy.

The contraindications are :

a. tumor extension across the sacroiliac joint and iliacus muscle or extensive soft tissue infiltration into the pelvis or thigh,
b. involvement of sacral nerves or sciatic nerve,
c. metastatic disease from the primary periacetabular tumor,
d. lack of residual bone stock of the ilium after planned resection,

e. poor life expectancy and physical status. Most patients are mobilized within 2-3 weeks from surgery and long term follow ups have shown most of them to be mobilizing either with a single or double crutch and very few without any support. This has been related to the change in the centre of rotation of the hip joint contributing to the instability. Various long term complications have been reported with the use of the saddle prosthesis like iliac wing destruction and proximal migration of the prosthesis leading to limb length discrepancies and dislocations, wound healing problems, deep infection ,nerve deficits, fractures and heterotrophic ossification. But comparison studies have soon complication rates similar to various newer techniques like acetabular reconstruction and allograft technique.

The functional outcomes for the surgery also have been reported to be moderately good as shown s the Toronto Extremity Salvage Score (TESS) and Musculoskeletal Tumor Society Score (MSTS) with average scores ranging form 40-60%. Reconstruction of the hip joint following periacetabular resections remains actually extremely challenging. There is still no consensus on a gold standard for the treatment of periacetabular tumors

and with limited number of studies , it is unclear whether the saddle prosthesis improves post operative function and reduces complications. Good results with saddle prosthesis is usually obtained when an adequate ilium is available close to the sacroiliac joint with which the Saddle can articulate, and when good soft tissue cover can be provided by preserving the glutei and iliopsoas muscles. We believe that the saddle prosthesis is still a useful implant in salvage surgeries.With improvements in implant design ,surgical technique and in experienced hands and still has a role to play in periacetabular surgeries.

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