



GIANT CELL TUMOR AT TROCHANTERIC REGION WITH PATHOLOGICAL FRACTURE AT BASE OF NECK OF FEMUR-A CASE REPORT

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Abstract : Giant cell tumor of bone is a relatively uncommon tumor. proximal femur is a relatively rare site of occurrence of primary giant cell tumor. Here, we are reporting a case of giant cell tumor of greater trochanter of femur in a 58 year old male along with pathological fracture at base of neck of femur who was successfully treated by curettage with bone cementing, fixation of fracture and attained complete functional recovery with no reactivation of tumor.

Keyword : Giant cell tumor, pathological fracture of neck of femur, curettage, polymethylmethacrylate, bone cement.

Case History

A 58 year old male presented with pain in Right hip joint for past six months, was increasing in intensity which made him bedridden. On examination ,a swelling noted around right trochanteric region with point tenderness. All attempted movements at right hip joint was painful. Blood investigations were within normal limits except increased ESR.

Figure 1(1a/1b):

X ray right hip joint showing giant cell tumour of right trochanter and fracture of neck of femur. X ray of right hip showed an osteolytic lesion at the right trochanteric region starting from base of neck upto subtrochanteric region with distention of bony cortex, soap bubble appearance and a pathological fracture at base of neck of femur.



Figure1a:pre op xray



Figure1b:pre op xray

Figure 2:

MRI right hip showing expansile lytic lesion in proximal femur in the metaphysis. Lesion is noted in neck region and proximal shaft. lesion is hypotense in T1 and T2 and hypertense in fat suppressed sequence. pathological fracture noted.



Figure 2:mri

A clinical diagnosis of giant cell tumor was made.percutaneous needle aspiration biopsy revealed giant cell tumor. Based on this, patient was planned for curettage and fracture was fixed with dynamic hip screw. In fracture table, through lateral approach 15 cm long incision was made, a 3x3cm window on lateral wall of trochanter was made, tumor at right trochanter was exposed. Tumor was thoroughly curetted. The cavity was expanded through all inner walls using a high speed burr. The fracture was fixed with dynamic hip screw and long slide plate.

Then the cavity was expanded through all inner walls using a high speed burr. The fracture was fixed with dynamic hip screw and long slide plate. Then the cavity was packed with bone cement (polymethylmethacrylate). Figure 3:Intraoperative clinical picture



Figure3:Intraoperative picture

Figure 4:post operative x ray showing cementing, fracture fixation



Figure 4:post op xray

Post operative period was uneventful. patient was followed periodically. Figure 5:shows follow up x ray 2 years with complete healing of pathological fracture at base of neck of femur.



Figure5:2 year follow up x ray

Figure 6a/6b/6c:clinical follow up images after 2 years



Figure 6a:full flexion right hip



Figure 6b:full adduction right hip



Figure6c:full abduction right hip

Figure 7:patient was ambulant, no disability, no deformity

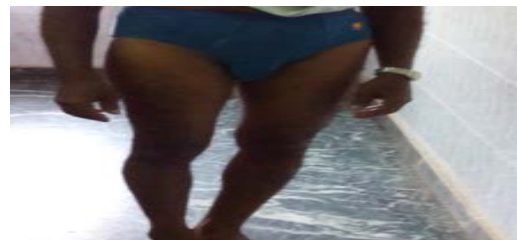


Figure7:patient with full recovery

Discussion and conclusion:

Giant cell tumors are relatively uncommon¹. Tumors of bone are characterized by presence of multinucleated giant cells (osteoclast like cells). It generally occurs in adults between ages 20 and 30 years and it has mild female predilection³. The tumor typically affects ends of long bones and involvement of flat bones of pelvis and greater trochanter is extremely rare¹. Rarely a pathological fracture can occur with disuse atrophy of muscles⁴. In our case report, a 58 year old male presented with giant cell tumor of right greater trochanter of femur with pathological fracture of neck of femur which is of rare occurrence. The giant cell tumor with pathological fracture was successively treated with curettage, fixation with bone cement polymethylmethacrylate (PMMA) and fracture fixation with dynamic hip screw. Dongqing zuo et al⁵ conducted a systemic review and meta-analysis to investigate efficacy of PMMA bone cementation and allogenic bone grafting following intralesional curettage for giant cell tumor. They concluded that local recurrence was minimal in PMMA cementation patients, suggesting PMMA is preferable for routine clinical restructuring in eligible giant cell tumor patients. PMMA bone cement acts as adjuvant through its heat of polymerization or through direct toxicity of monomer. This is easily applied and can be used as filling agent in conjunction with other adjuvants. commonly used adjuvants are liquid nitrogen, phenol, polymethylmethacrylate or to extend distraction of tumor cells. curettage with adjuvant bone cementing allows for better stability especially at a pathological fracture setting. curettage is done by making a large cortical window over the lesion, if the window is smaller residual tumor may be left on undersurface of the near cortex. The other options are autogenous bone grafting, allografts, demineralized bone matrix, artificial bone graft substitute. In our study, after 2 years follow up of patient treated with PMMA bone cement packing and fracture fixation with dynamic hip screws had complete healing of pathological fracture, no reactivation of tumor either clinically or radiologically, no disability or deformity and the patient was ambulant.

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