

Cyto morphology of Giant Cell tumor of proximal Femur-A Rare Case Report**Dr. Ezhil Arasi.N¹, Dr. P.Manimekhala², Dr. Neelavani³, Dr. Amatul Basheer Bushra⁴.**¹Professor and HOD, ²Associate professor, ³Assistant professor, ⁴Senior resident, Osmania general hospital, Department of pathology, Telangana, Hyderabad, India***Corresponding author**

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Abstract: Giant cell tumor is a benign neoplasm constitutes 5% of primary bone tumors mostly in distal femur and proximal tibia followed by distal radius. Incidence of giant cell tumor at the neck of femur is 4%. It is an aggressive tumor and outcome is unpredictable. Usually, they are diagnosed on histopathology. Cytology is rarely used as a modality. Hence, Cyto morphological features of giant cell tumor of neck of femur have rarely been described and few are available in literature. Here we present single case of a 26 year old female who presented with pain and swelling at right hip since one year. On further investigation, patient was found to have pathological fracture. Intra operative squash was sent. Cyto smear revealed features of giant cell tumor which was later confirmed on histopathology.**Keywords:** Benign, Giant cell tumor, Femur, Osteoclastic type of giant cell.

INTRODUCTION

Giant cell tumor accounts for 5% of all primary bone tumors and 20% of all benign skeletal tumors [1, 2, 3]. 80% of cases are reported between ages of 20 and 50 years with a peak incidence at about 25 years. Giant cell tumor of the bone is more common in women than in men [1, 2, 3, 4, 5]. The sites most commonly affected are lower end of femur, upper end of tibia and lower end of radius. Proximal femur is an uncommon site for occurrence of tumor. Incidence being less than 4% [6]. Most common presenting symptom is pain, swelling and sometimes pathological fracture. Accordingly they may show fracture and osteolytic lesion radiologically.

CASE REPORT

Here we present a 26 year old young female presented with pain and swelling at the right hip with difficulty in walking since one year. On further investigation, patient was found to have pathological fracture.

Investigations:**Haemogram:** Normocytic normochromic blood picture. WBC-leukocytosis.**X-ray of pelvis-** Osteolytic lesion in the right neck of femur along with pathological fracture.**CT Scan-** Revealed that the lesion was confined to the neck with no extension into soft tissue or adjacent bony structures with no breach of cortex. Curettage was done and intra operative squash was sent.**Gross** –We received a soft, friable grey brown soft tissue mass with gritty areas.**Cytology:**

Squash Cyto smears were cellular with cohesive fragments of dual population of cells, clusters of oval to polygonal elongated mononuclear cells admixed with osteoclastic type of multinucleated giant cells which are attached to the periphery of stromal fragments.

**Fig-1: X-RAY showing Osteolytic lesion neck of femur with pathological fracture.**

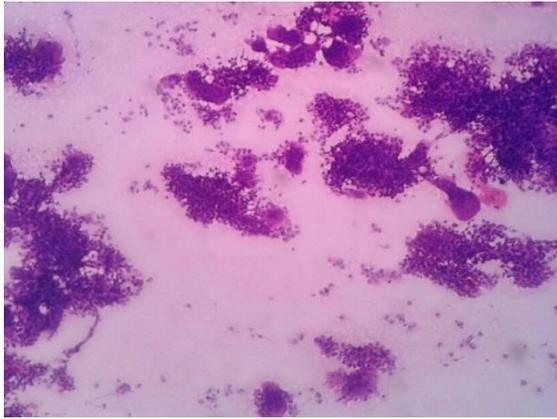


Fig-2: (H&E,4x)-spindle shaped cells along with osteoclastic type of giant cells.

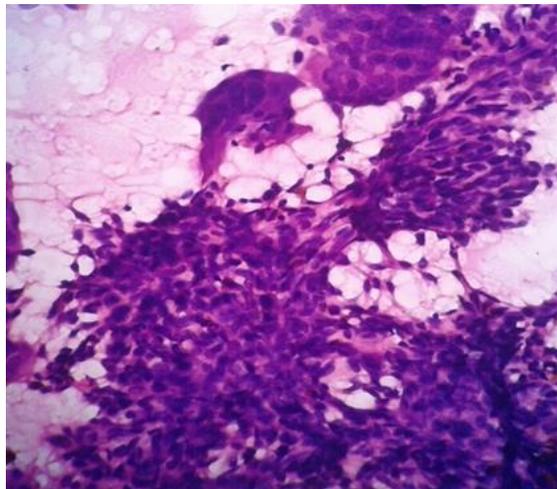


Fig-3: H&E, 10x)-showing spindle cells with osteoclastic type of giant cells

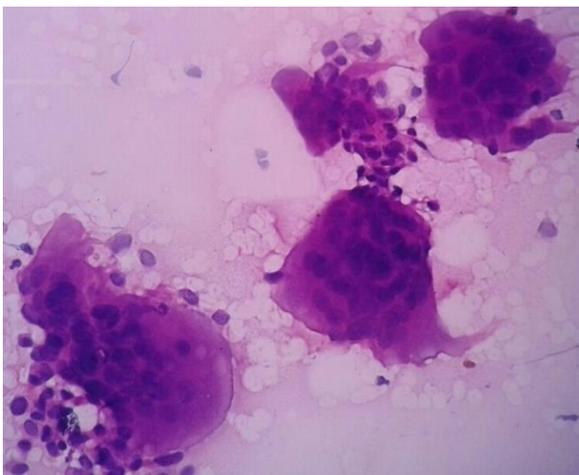


Fig-4: (H&E, 10x)-showing osteoclastic type of giant cells.

DISCUSSION

Giant cell tumor of neck of femur is rare. Clinical features include pain, swelling and pathological fracture which is similar to any tumor presenting in this location. Hence, review of literature shows very few cases diagnosed by squash cytology. Cytology proves to

be helpful in most of the cases when intra operative squash is sent. so that initial management of case may be planned. Giant cell tumor on cytology shows abundant round to oval polygonal or elongated mononuclear cells evenly mixed with numerous osteoclasts-like giant cells which may be very large and contain 50–100 nuclei [7]. Differential diagnosis include Aneurysmal bone cyst, Pigmented villonodular synovitis, Osteoblastoma, Brown tumor of hyperparathyroidism and Osteosarcoma. Thorough search was done to rule out aneurysmal bone cyst which is a close differential diagnosis in this case was ruled out due to absence of haemosiderin laden macrophages, cyst macrophages and haemorrhagic areas. Brown tumor of hyperparathyroidism occurs at jaw and also shows increased level of parathyroid hormone. Osteosarcoma shows pleomorphic cells, giant cells and mitotic figures and presence of osteoid. Pigmented villonodular synovitis is seen at joints. Site predilection of giant cell tumor helps to differentiate from other differential diagnosis. A final diagnosis of giant cell tumor was given on squash cytology later confirmed on histopathology.

According to NcMkandawire [6] giant cell tumor occur most commonly in the age group of 20-50 years with female preponderance which is similar to our case. Omar kirmani et al.; [8] had reported a case of pain in the right hip as symptom which was diagnosed as giant cell tumor similar to our studying Mkandawire, omarkirmani et al.; [6,8] had reported a case of giant cell tumor in neck of femur which is similar to site in our study.

CONCLUSION

Clinico radiological finding along with pathology helps in the diagnosis of giant cell tumor. FNAC as an initial investigative procedure in the evaluation of bone lesions helps in deciding the mode of treatment. Hence intra operative squash can be employed as the initial step for a provisional diagnosis of bone tumors which can be later confirmed by histopathology.

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