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NAVIGATING THE JOURNEY OF DEALING WITH GIANT CELL TUMOUR [GCT] ON DIGITUS II

Oncology

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ABSTRACT

Most Common Bengin Tumor On The Right Digitus II Which Was Reported To Surgical Oncology Dmg Ongole. A Through Investigation Were Performed According To The Nccn Protocol Treatement Was Given. In Detailed Expression Were Given In This Paper.

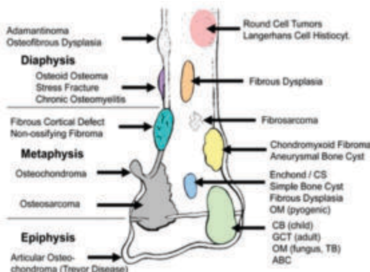
KEYWORDS

Gaint Cell Tumour, Osteoclastoma

INTRODUCTION

The lesions which are destructive in nature, which were common in the small hands and feet. Their is a diagnostic challenges because of neoplastic and reparative nature.clinical, radiological and pathological presentation ensures the type of diseases and prevalance of the disease.this lesion is typically found at metaphyseal or epiphyseal regions of tibia or femur etiological .rarely tumour present on the upper extremities explained in this case report.

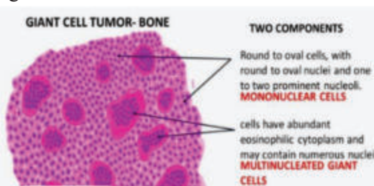
Lower Extremities And Bone Tumour



Case Report

A geiriatric patient with nil comorbid condition aged of 73yrs reported to the hospital with chief complaint of swollen pointed finger on the right hand since 2 month. On examination the finger swelling measuring 3x1.8cm on the ventromedial surface of the finger. Localized to index finger only. advised for fine needle aspiration cytology (FNAC) of the right index finger and usg /x ray /ct of hand

Histopathological report(HPE) : FNAC reported that mixture of variable cell population individual cell are polygonal cell to spindled mononuclear cells in loose cluster or individually dispersed with moderate cytoplasm and round to oval nuclei .admixed with scattered osteoclast like multinucleated giant cell, foamy histocytes and hemosiderin laden histocytes arranged against an inflammatory cells suggestive of gaint cell tumor of bone.



Radiological investigation :usg of right index finger lobulated mass hypoechioic lesion measuring 3.6x 1.5cm is seen along with ventromedial aspect of digitus II near proximal interphalangeal joint.resembling gaint cell tumour of tendon sheet .their is minimal vascularity present ,no cortical irregularity ,flexor and extensor fingers of the tendon apperas normal.

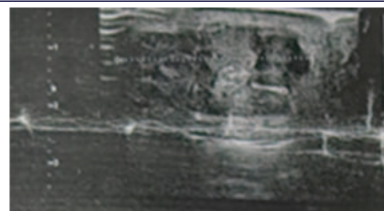


Fig 1 USG of Digitus II

X ray showed –soft tissue swelling on the digitus ii which is subtle scalloping on the lateral aspect of the proximal aspect .no signs and symptoms of fractures, evidence of lytic lesion which is sclerosing type.no fluid collection at the joint space.

Plan of care: curative intent – wide local excision of tumor and adj chemotherapy(ct)/radiation therapy (rt) after hpe reporting if necessary.

Surgical Intent

The plan of care is curative intent, after through work up, under aspetic condition under general anaesthesia, incision placed on the middle to proximal surface lateral side of digitus ii ,incision extended and deepened skin ,muscle dissected lobulated mass present measuring 4x3cm near flexor policis brevis tendinous sheath (fig 1),whole mass ressected in-toto fig 2 and sheath,vessels were preserved.primary closure attained and pressure dressing given fig 3,fig 4.

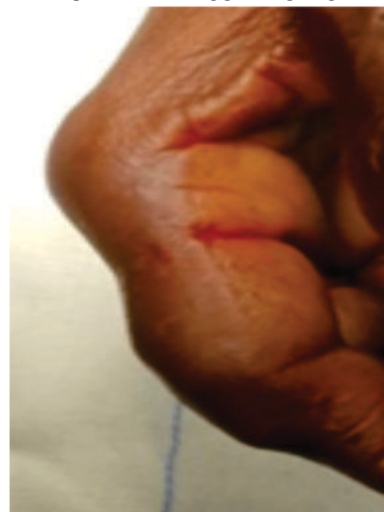


Fig :1 Swelling On The Ventromedial Surface 4x3cm

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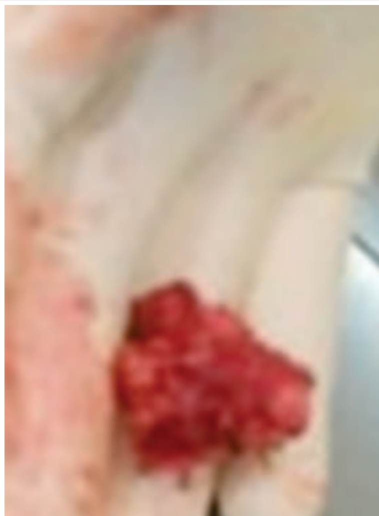


Fig 2 Excised Mass

Fig 3 After Ressection

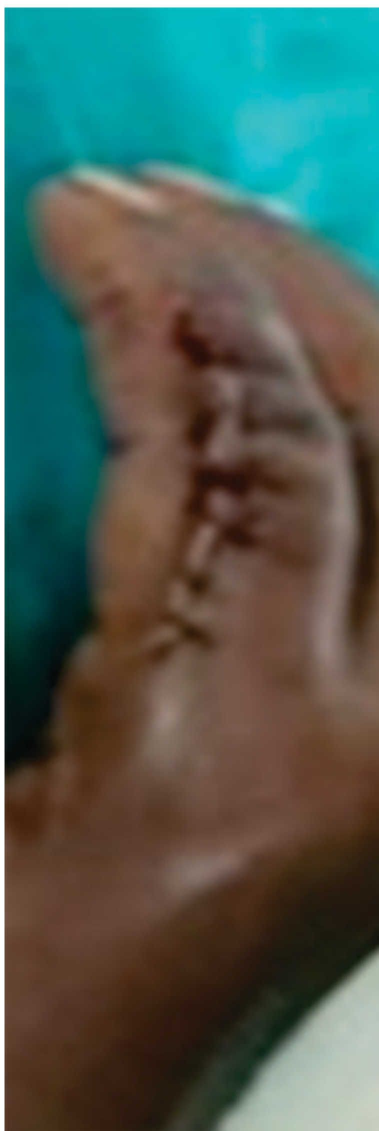
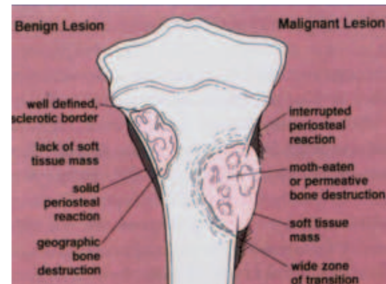


Fig 4 Primary Closure

DISCUSSION

A mesenchymal malignancy (malignant spindle cells that differentiates to produce osteiod or immature bone .non-cancerous growth that can affect bones and tissues around the joints, typically seen in long bone. There is less likely to be metastatic spread.seldom the tumors of the bone develop at the region of phalanx of a finger. According to the world health organization they coined and classified as tenosynovial giant cell tumor .in this case the lobulated mass present on the middle to proximal phalanx, performed wide local excision explained and final report was gaint cell tumor of tendon sheath. Only 2% of all gct instance suggested that hand and phalangeal bone involvement as the predominant symptom is exceedingly rare. [1-20]



Epidemiology

Giant cell tumour were hard bengin noddular soft tissue tumour that develops from the synovial lining of a tendon. Soft tissue tumors seen in 3rd and 5th decade of life more frequently. Rarely this tumour are seen.when comes to imaging techniques for surgical planning, magnetic resonance imaging plays a major role and choice of investigation.[1-20]

Apart from lower extremities, upper extremities where the skeletal appendicular to axial choice of gct is rare. Typical feature is mononuclear multinucleated gaint cell results in osteoclasts. According to the who 2013 classification tenosynovial giant cell tumour .always localizied or focal synovitis ,pimented and non pigmented villinodular tumours of the tendon sheath ,extra articular of the tendon sheath .these are formerly known as nodular tenosynovitis diffuse tgct include both pvns 20q11 amplification is seen in 54% of gcts, and 20% of cases exhibit over-expression of p53..chromosomal translocation occurs when a section or portion of a particular chromosome 1 and 2.colony stimulating factor -1 or csf-1 is a kind protein that is overproduced by cells with this translocation .tgct cells uses csf-1 to locate white blood cells cbc[1-20].

Differential Diagnosis: Desmoid Tumour, Glomangioma.

- ICD Classification icd-10: 9250/1 - giant cell tumor of bone nos
- ICD-11: 2f7b & xh4tc2 - neoplasms of uncertain behavior of bone or articular cartilage & giant cell tumor of bone nos

Pathophyisiology

- GCTB related clonal aberrations occur in a background of epigenetic histone modifications (especially the g34w mutation of h3f3a gene) (hum pathol 2018;81:1)[10-11]
- Neoplastic mononuclear stromal cells in gctb express receptor activator of nfκβ ligands (rankls) and various chemokines and cytokines associated with monocyte recruitment and reactive multinucleated giant cells (osteoclastogenesis) (hum pathol 2018;81:1)[10-11]
- Activation of wnt / beta catenin pathway in gctb tumorigenesis (pathol res pract 2009;205:626)[4]
- Clonal telomeric associations (tas) were found in gctb (genes chromosomes cancer 2009;48:583)[13]
- Transformation to malignancy may occur after therapeutic irradiation (indian j pathol microbiol 2002;45:273)[12]
- Tp53 and hras mutations have been identified in malignant gctb not associated with prior radiation (histopathology 2001;39:629)[1-12]

Eneralized histopathological bengin bone gct were classified into three types [table-1]

TYPE 1 cells	Interstitial fibroblasts – collagen exhibit proliferative capabilities. Tumour component of GCT with mesenchymal cells. Early differentiation into osteoblasts.
Type II cells	Monocyte/Macrophage family -peripheral blood stream. precursor of tumour-Multinucleated giant cells

Type III Cells	Osteoclastic activity, possess enzyme for bone reportion, tartrate resistant acid phosphatase and type II carbonic anhydrase
THIS CASE BELONGS TO GRADE -II[1-19]	

CONCLUSION

In this case the gct on the digitus II is rare, according to region specificity.the gct were specified mainly to 3rd and 5th decade.the gct have osteoclastic activity and tartarte resistant acid phosphatase and type II carbonic anhydrase. Mainly 69% to 100% of giant cell tumors harbor h3f3a gene mutations, while h3f3b gene mutations. Radiological investigation for GCT is mainly ct mri x ray were beneficial. If the center with less equipment in rural usg can be benifical in diagnosis.apart from that serium calcium calcitonin and serum phosphatase also plays major role.clinical analysis immunophenotype, and cytogenetic/molecular alterations, in order to get a correct diagnosis.metastatic rate is less for benign tumours malignant requires chemotherapy to avoid metastasis

Treatment modalities chemothearpy: denusumab and zoledronic acid [11-14]

All should be aware of side effect of chemotherapic drugs that is mainly osteonecrosis

Recent advances technique sanger gene sequencing, rankl receptors

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