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# A RARE CASE OF ANTERIOR CHEST WALL TUMOUR

UNIT 4&7

DEPARTMENT OF GENERAL SURGERY

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# INTRODUCTION

- ❑ Giant cell tumour( **Osteoclastoma**) is a relatively common, benign and locally aggressive tumour which presents in the 3<sup>rd</sup> and 4<sup>th</sup> decades of life
- ❑ More commonly affecting **women** and usually affects **ends of long bone** ,very rarely the ribs
- ❑ Even if it affects the rib, it is the **posterior arc of rib** commonly involved
- ❑ We present a rare case of primary GIANT CELL TUMOUR arising from the anterior arc of 4<sup>th</sup> and 5<sup>th</sup> rib



# HISTORY

A 21 years old male presented with

- ▢ Complaints of a swelling in the front of left chest wall since 8 months
- ▢ Size initially approx 6x5cm, gradually increased to the current size of 12x8cms

The patient denies the history of

- ▢ Pain
- ▢ Trauma
- ▢ Breathing difficulty
- ▢ Cough
- ▢ Loss of weight/appetite

# CLINICAL EXAMINATION

A single, 12\*8 cm sized oval shaped swelling is present in the left anterior chest wall overlying 4,5 & 6 ribs

Normal skin overlying the swelling

No engorged veins

Nontender

Fixed to the chest wall

Skin over swelling not pinchable

Hard in consistency

Nipple areolar complex – normal

Ipsilateral axillary and supraclavicular nodes – Not palpable

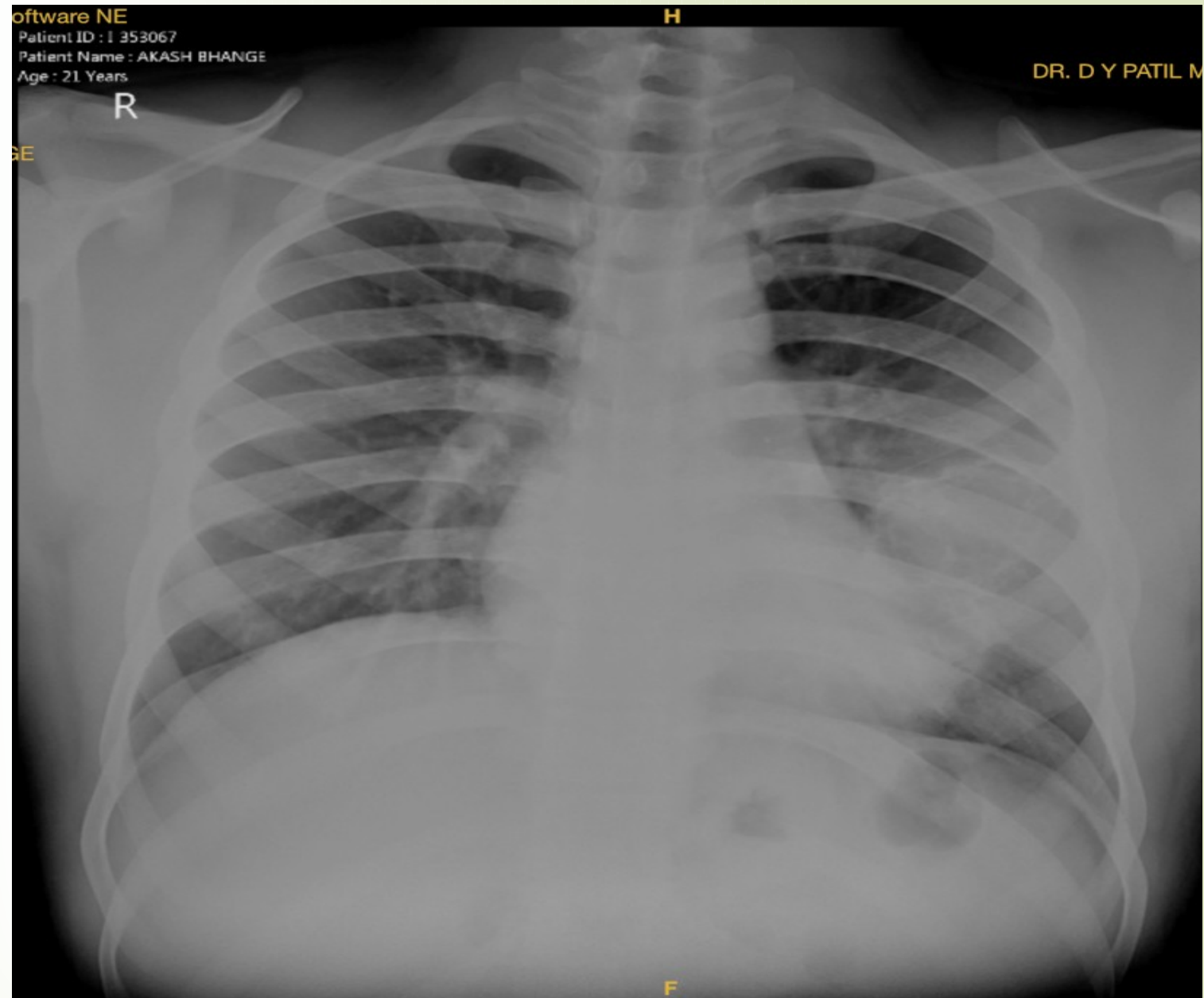




# INVESTIGATIONS

- All the routine blood investigations were normal
- Chest x ray – A Soft tissue shadow was seen over the anterior part of left 3<sup>rd</sup> and 4<sup>th</sup> ribs
- Ecg – normal
- Serum acid phosphatase levels -10.2IU/L

# CHEST X RAY

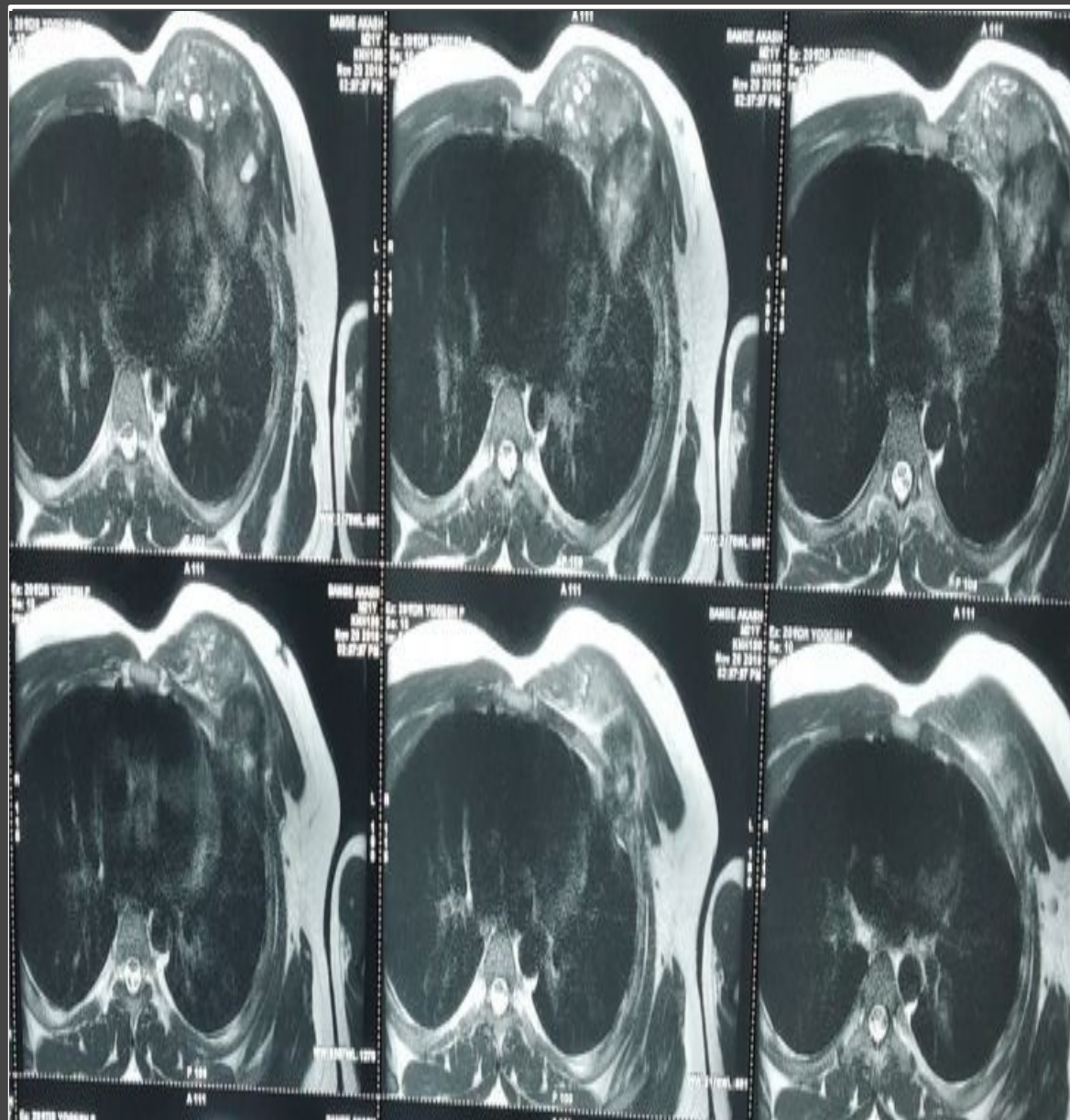
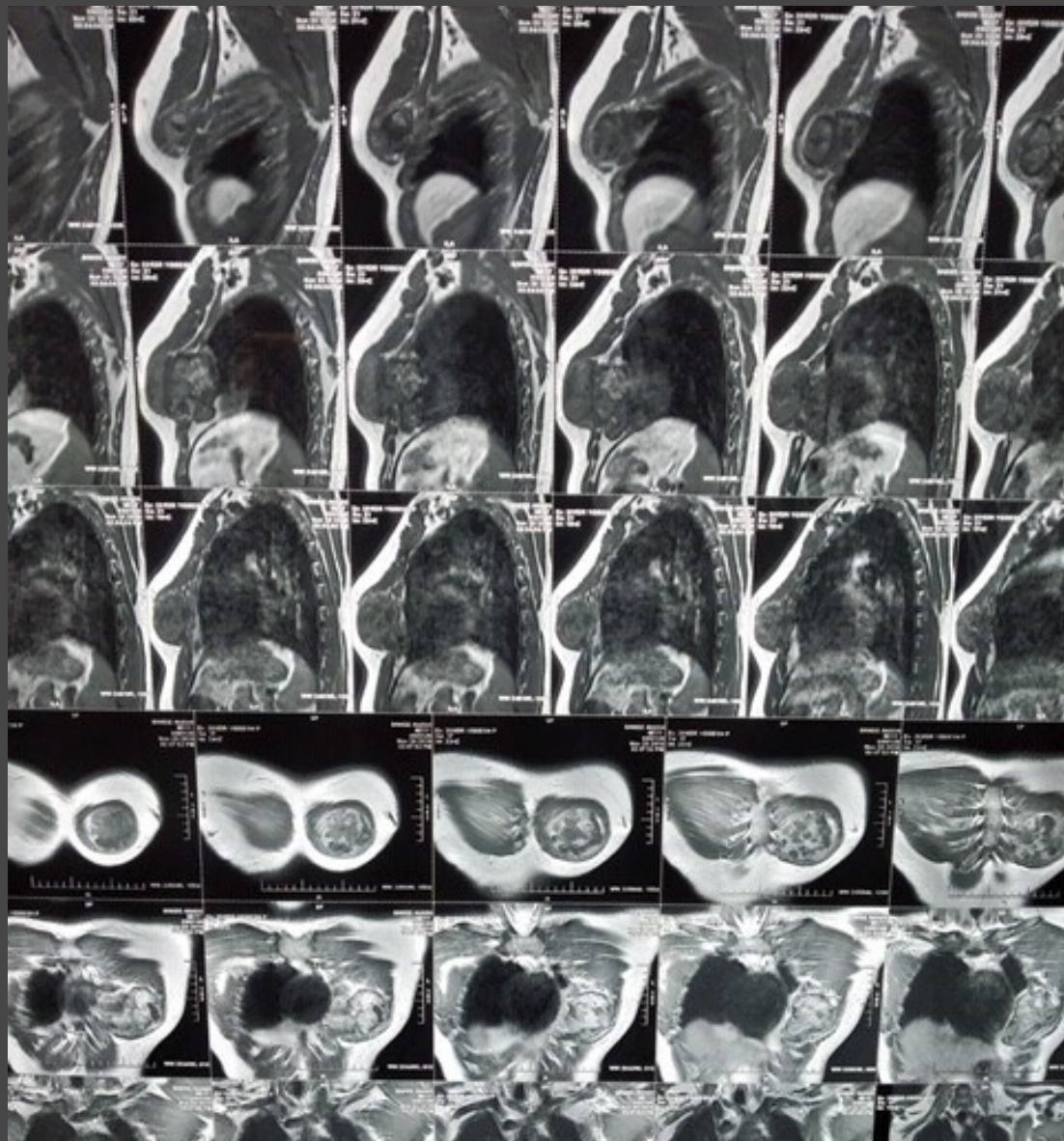




# MRI CHEST

A well marginated, lobulated, heterogeneously altered signal intensity along the anterior left thoracic wall involving the following planes

- ▣ Subcutaneous fat plane
- ▣ Myofascial planes
- ▣ Thoracic cage
- ▣ Intrathoracic region



# CONTRAST ENHANCED CT CHEST

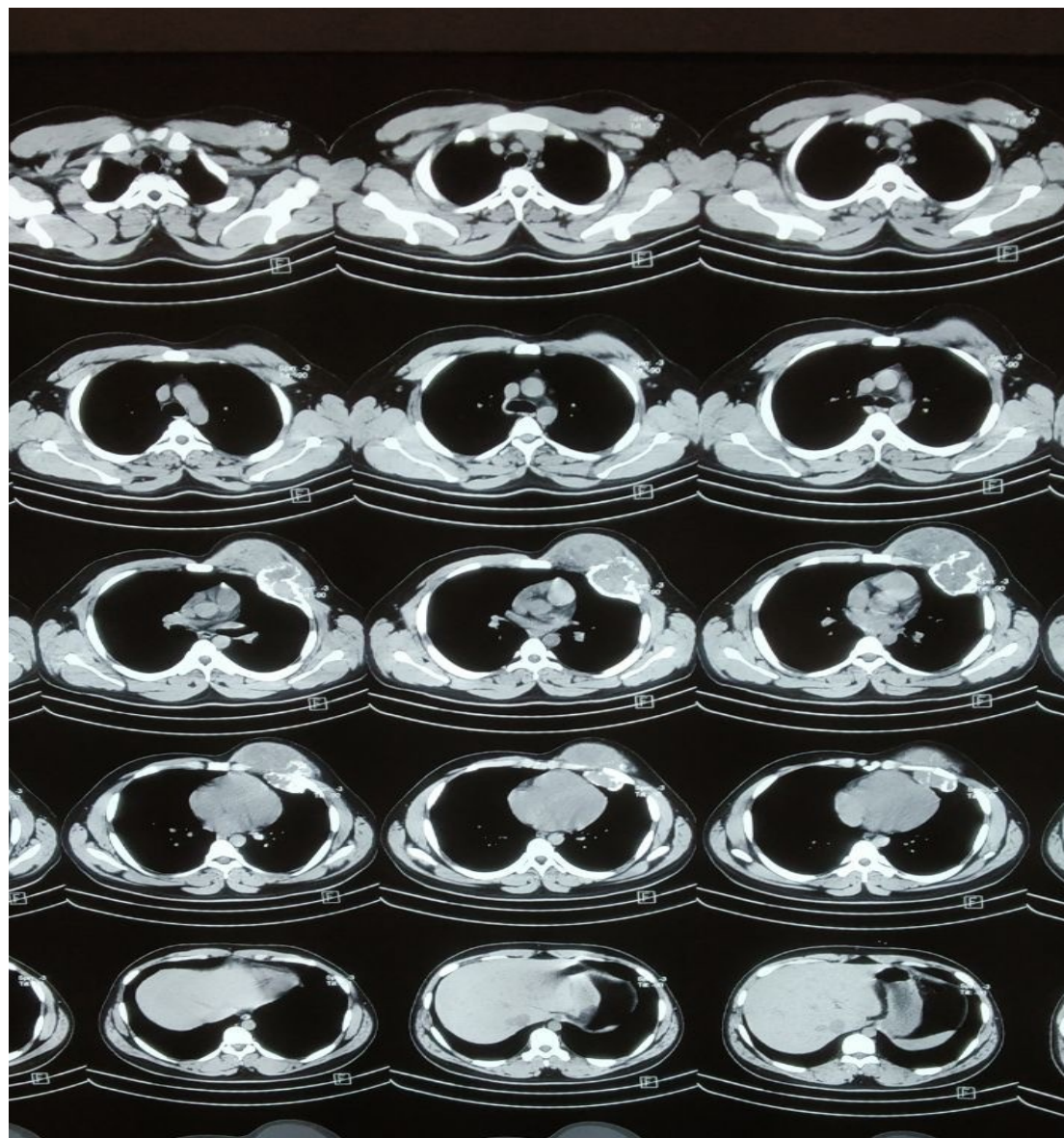
A large, well defined, multilobulated seen involving the anterior aspect of left 4<sup>th</sup> rib with mildly enhancing soft tissue component of size 6x5x6cm

Involves the muscles of anterior chest wall

No intralesional calcifications

Bilateral lung parenchymae normal/ No effusion

POSSIBILITY OF NEOPLASTIC ETIOLOGY – arising from bony cage of thorax(ribs)



# TRUCUT BIOPSY – GIANT CELL TUMOUR



SURGERY PLANNED



**WIDE LOCAL EXCISION  
WITH CHEST WALL  
RECONSTRUCTION**



# TUMOUR DISSECTION

# PTFE MESH PLACEMENT



RECONSTRUCTION  
DONE BY LOCAL  
ADVANCEMENT  
FLAP COVER WITH  
PECTORALIS MAJOR  
AND RECTUS  
ABDOMINIS



# RESECTED SPECIMEN





# HISTOPATHOLOGY

**GIANT CELL TUMOUR -  
LOCALLY INFILTRATIVE IN  
NATURE CAN BE  
POTENTIALLY MALIGNANT**

CELL TUMOUR -locally infiltrative nature can be potentially malignant

# DISCUSSION



# INCIDENCE AND EPIDEMIOLOGY

- ❑ Giant cell tumour of rib is a rare site with a reported incidence of <1%, that too of posterior arc being common
- ❑ On the whole, GCT of the bone is an uncommon neoplasm accounting for 4-5% of all primary bone tumours
- ❑ Common in age group between 30-40yrs.
- ❑ Common in females, estrogen and progesterone receptors are identified in the cells of this lesion
- ❑ Derived from fused stromal cells of mononuclear phagocytic lineage



Most common sites of giant cell tumour:

1. Metaphysis or epiphysis of long bones (mostly knee joint bone)-60%
2. Vertebral bodies
3. Scapula
4. Sternum
4. Patella
5. Skull bone
6. Talus



# CLINICAL & RADIOLOGICAL FEATURES

- Pain and increase in the local volume
- Pathological fracture due to weakening of the cortical bone
- In routine radiological radiograph,

Initially – eccentric expanded lytic lesion with a surrounding sclerotic halo

Later – encompass the entire circumference of the bone, causing rupture of the cortical bone

# GRADING AND STAGING

- Generally considered benign but malignant cells can arise de novo or via transformation from a benign neoplastic giant cell lesion

## 1) Based on histological features

- Benign
- Aggressive and malignant – increased mitotic features and pleomorphism

## 2) Surgical staging

- Clinically Latent
- Active and aggressive



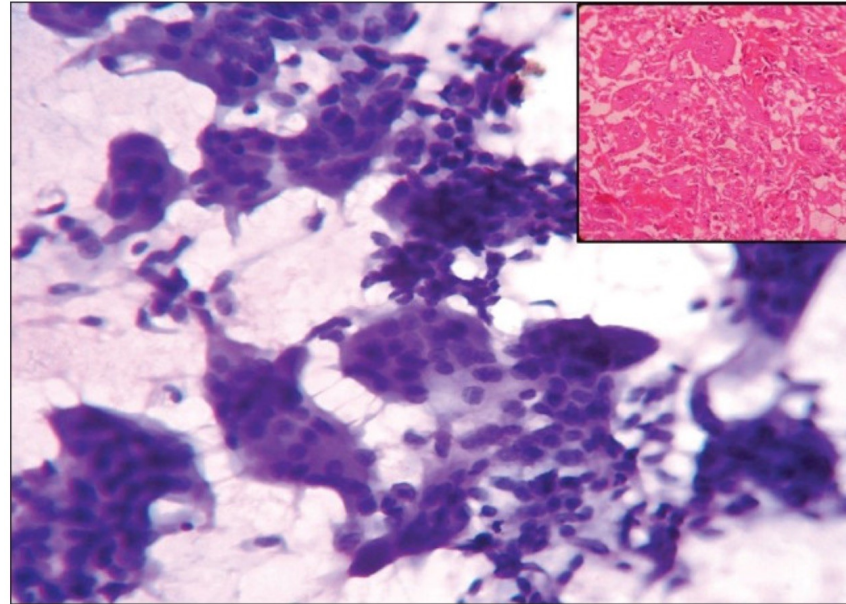
# HISTOLOGICAL DIFFERENTIAL DIAGNOSIS

□ Quality and size of the biopsy are important as a wide array of lesions histologically mimic each other

- 1) Aneurysmal bone cyst
- 2) Brown tumour
- 3) Chondroblastoma
- 4) Chondromyxoid fibroma
- 5) Non ossifying fibroma
- 6) Giant cell rich osteosarcoma
- 7) Malignant fibrous histiocyoma

# HISTOPATHOLOGICAL PICTURE

Figure 1: Aggregates of uniform appearing spindled stromal cells and innumerable osteoclast type giant cells (H and E, ×400). Inset showing histomorphology of the resected giant cell tumor (H and E, ×400)



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# CONCLUSION

- ❑ In general, all GCTs should be considered potentially aggressive and wide excision is recommended
- ❑ Neoplastic osteoid formation is absent which excludes GCT from other differential diagnoses
- ❑ Serum acid phosphatase values is the useful markers in the diagnosis of GCT
- ❑ The values are high in 56% of GCT patients
- ❑ To conclude, GCT of the anterior chest wall can be mistaken for ABC and other malignant tumours of bone and soft tissues
- ❑ Biopsy would be diagnostic if adequate specimen is obtained.

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