

Chest Wall Masses & Conundrums

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Disclosures

None

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Objectives

- Better understand acute disorders of chest wall
- Identify and categorize bone and soft tissue masses of the chest wall
- Become familiar with common chest wall disorders and understand their treatment

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Chest Wall Masses

- (Congenital variants)
- Acute disorders

- Osseous tumors
- Soft tissue tumors

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Chest Wall - Congenital Variants

- Common
 - Cervical rib
 - Pectus excavatum & carinatum
- Uncommon
 - Cleidocranial dysostosis
 - Poland syndrome



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Acute Disorders

- Infection
- Hematoma
- Iatrogenic hernia

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Chest Wall Infections

- Almost always secondary
 - Post-operative
 - Trauma
 - Direct spread of pleural empyema
 - Direct spread of lung infection
 - Drug addicts
 - Primary infections are rare

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Chest Wall Infections

- Almost always secondary
 - Post-operative ————— staph aureus
 - Trauma ————— or
 - Direct spread of pleural empyema - pseudomonas
 - Direct spread of lung infection
 - Drug addicts
 - Primary infections are rare

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Chest Wall Infections

- Almost always secondary
 - Post-operative
 - Trauma
 - Direct spread of pleural empyema
 - Direct spread of lung infection ——— Tb / fungal
 - Drug addicts
 - Primary infections are rare

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Chest Wall Infections

- Almost always secondary
 - Post-operative
 - Trauma
 - Direct spread of pleural empyema
 - Direct spread of lung infection
 - Drug addicts ————— septic arthritis
- Primary infections are rare

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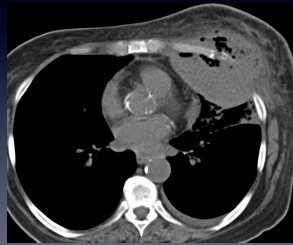
Chest Wall Infections



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Tuberculosis

- Empyema Necessitans
- Chest wall involvement uncommon
- Hematogenous seeding to chest wall more common than contiguous spread of lung/pleural infection



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Open Window Thoracostomy

- Treatment of chronic pleural empyema
- Relatively permanent draining to eliminate need for drains/tubes
- Claggett and Eloesser windows radiographically indistinguishable

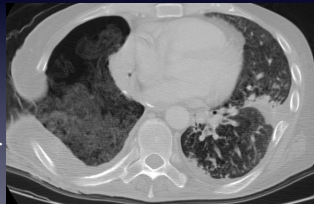


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Open Window Thoracostomy

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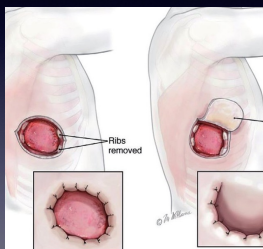


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Open Window Thoracostomy

Claggett Window	Eloesser Flap
temporary	permanent
large	small

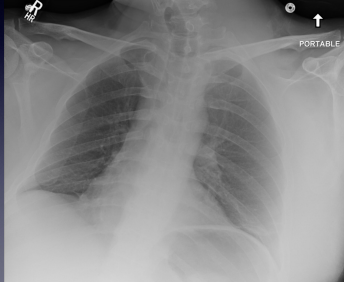


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Hematoma

- Etiologies
 - Trauma
 - Anticoagulation
 - Neoplasm



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Iatrogenic Hernia

- Postoperative lung herniation
- Post-thoracotomy incision



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Chest Wall Masses

- Osseous tumors
- Soft tissue tumors

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Osseous Tumors

- Non-aggressive
- Aggressive

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Osseous Tumors

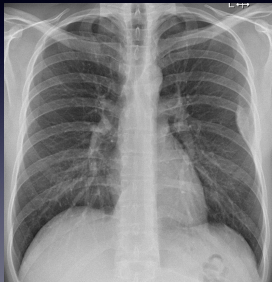
- Non-aggressive ————— fibrous dysplasia
- Aggressive enchondroma
 osteochondroma

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Fibrous Dysplasia

- Fusiform rib enlargement & deformity
- Cortical thickening & increased trabeculation
- Amorphous or irregular calcification on CT
- Posterior or lateral rib
- Slow growing

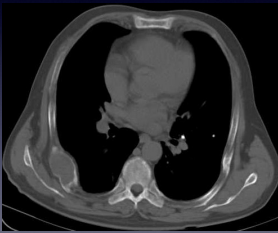


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Fibrous Dysplasia

- Young adults
- Fusiform rib enlargement & deformity
- Cortical thickening & increased trabeculation
- Amorphous or irregular calcification on CT
- Posterior or lateral rib
- Slow growing

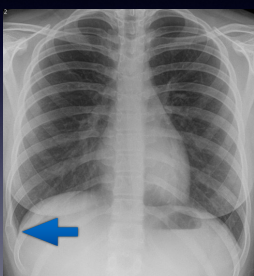


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Enchondroma

- Lobulated, well-defined lucent lesion
- Internal calcification possible
- Costochondral junction popular
- Slow growing

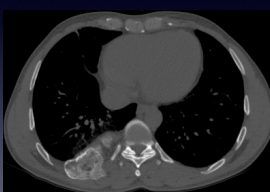


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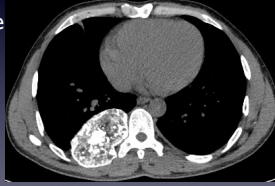


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Osteochondroma

- Pedunculated protuberance from surface of parent bone
- Continuity w/ medullary cavity of parent bone
- Costochondral junction popular

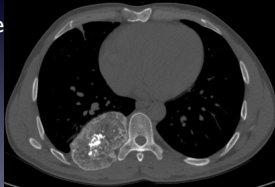


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Osteochondroma

- Pedunculated protuberance from surface of parent bone
- Continuity w/ medullary cavity of parent bone
- Costochondral junction popular



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Osseous Tumors

- Non-aggressive
- Aggressive ————— mets/myeloma
chondrosarcoma
osteosarcoma

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Metastasis

- Spine most common site
- Thoracic spine mets most commonly symptomatic
- 50% = breast, lung & prostate cancer
- Watch for spinal canal extension

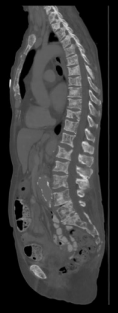
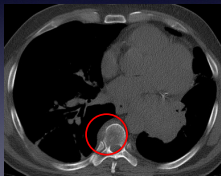


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Metastasis

- Blastic
 - Prostate cancer
- Lytic
 - Lung cancer
 - Renal cancer
- Blastic + Lytic
 - Breast cancer



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Myeloma

- Punched out, well-defined lytic lesion
- Associated soft tissue masses



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Myeloma

- Common
- Older adults
- Systemic disease present

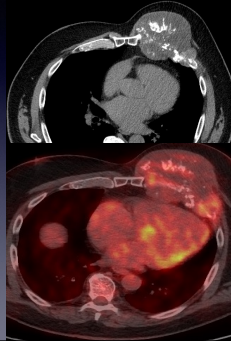


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Chondrosarcoma

- Lobulated mass, irregular margins
- Bone destruction
- Costochondral junction & sternum



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Osteosarcoma

- Central dense calcification
- Mixed lytic/sclerotic pattern
- Ill-defined margins
- Costochondral junction popular
- Heterogeneous enhancement



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Osteosarcoma

- Rare
- Worse prognosis than osteosarcoma elsewhere
- Young adults
- Men > women



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Bone Tumors in Chest Wall

- Ground rules!
- Majority are metastases
 - Lung or breast cancer
- Top bone tumor by bone
 - **sternum** - most are malignant: **mets/myeloma/chondrosarcoma**
 - **vertebra** - almost always **mets/myeloma**
 - **rib** - many are **mets**, but others possible

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Soft Tissue Tumors

- Specific
- Nonspecific

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Soft Tissue Tumors

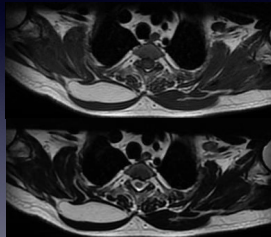
- Specific ————— lipoma/liposarcoma
- Nonspecific elastofibroma dorsi
neurofibroma/schwannoma

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Lipoma

- Fatty soft tissue tumor
- Benign
- Well-circumscribed mass
- Homogeneous fat attenuation
- No treatment needed

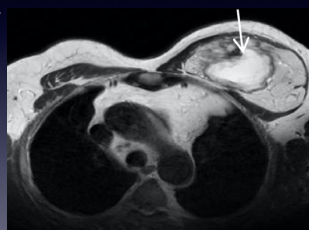


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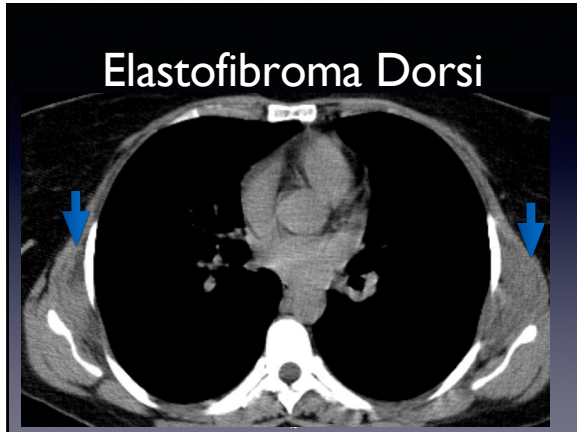
Liposarcoma

- Fatty soft tissue tumor
- Malignant
- Heterogeneous
- Non-fatty component
- Thick septa
- Nodular enhancement



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NF / Schwannoma

- Ovoid mass w/ sharp margins
- Pressure erosion
 - Enlarged neural foramen
 - Ribbon ribs
- No bone destruction/invasion



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Soft Tissue Tumors

- Specific
- Nonspecific
 - desmoid tumor
 - malignant fibrohistiocytoma

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Desmoid Tumor

- May appear nonspecific
- Ill-defined margins
- Amount of enhancement varies
- Intercostal muscles & shoulder girdle

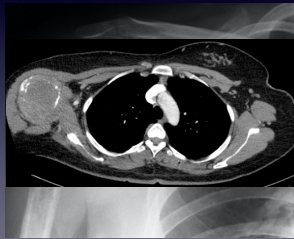


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Malignant Fibrohistiocytoma

- Ill-defined margins
- Non calcification
- Heterogeneous enhancement
- Muscle or fascial planes



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Questions?

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THANK YOU & BEST WISHES!

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