

Upper Limb Neoplastic Conditions

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O&T QMH



Tumour= Swelling

- **tumour** | 'tju:mə | (US tumor) noun
- a swelling of a part of the body, generally without inflammation, caused by an abnormal growth of tissue, whether benign or malignant.
- • *archaic* a swelling of any kind.
- • *Now* neoplasm/ new growth: benign or malignant



Upper Limb Bone Tumour

Top 5	Whole body	Upper Limb	Hand
osteosarcoma	1952	208	5
exostosis	1024	178	15
chondrosarcoma	1073	146	14
GCT	671	130	11
Lymphoma of bone	905	112	3



Hand Bone Tumour

Top 5	Whole body	Upper Limb	Hand
chondroma	424	85	180
Osteoid osteoma	95	59	27
exostosis	1024	178	15
chondrosarcoma	1073	146	14
GCT	671	130	11



Tumour= Swelling

- Approach is not different from lesion in other parts of body
 - Usually detected early because visible and detectable (small volume)
 - Because of small volume lesion within closely packed structures (eg. Tendon, nerve), more likely symptomatic or function problem



Physical Examination

- **Size of lesion**
- **Level of lesion**
 - **Skin**
 - **Subcutaneous**
 - **Fascia**
 - **Subfascial, muscle, nerve, vessels**
 - **Bone and joint**
- **5cm or deep to fascia: indicated for further investigation**



DDx/ Classification

- **Tumour-like lesion eg. Abscess**
- **Benign tumour eg. Haemangioma**
- **Malignant tumour eg. Osteosarcoma**



Cases referred to Orthopaedics

- **Skin lesion**
 - **Benign and malignancy (SCC, Melanoma)**
- **Soft tissue lesion**
 - **Tumour-like (ganglion), Benign (lipoma, haemangioma), malignancy (MFH)**
- **Joint lesion**
- **Bone**
 - **Benign, primary malignancy, secondary malignancy**



Skin Lesion







ABCDE

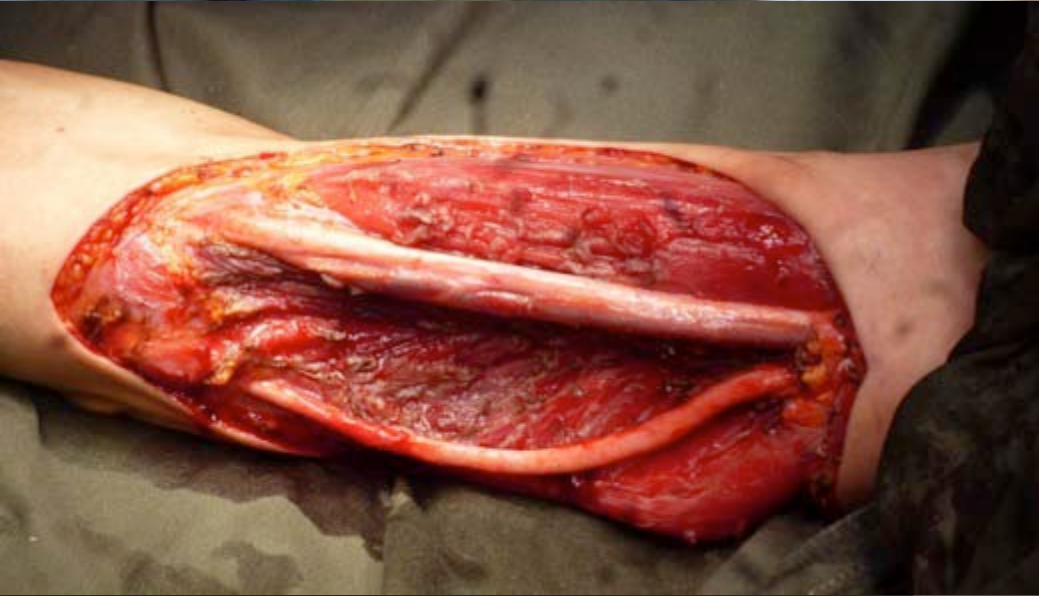


Heamangioma



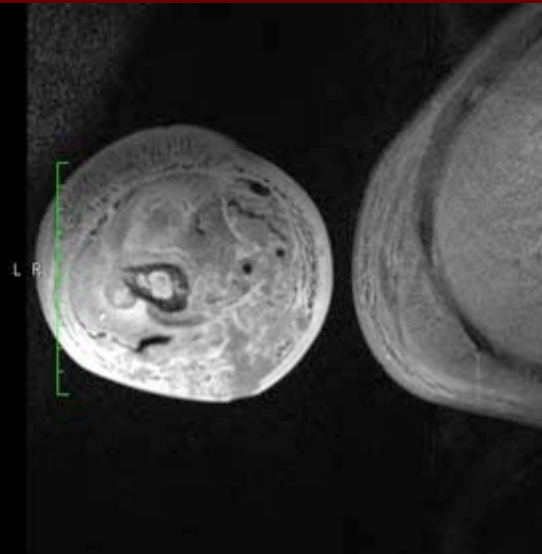
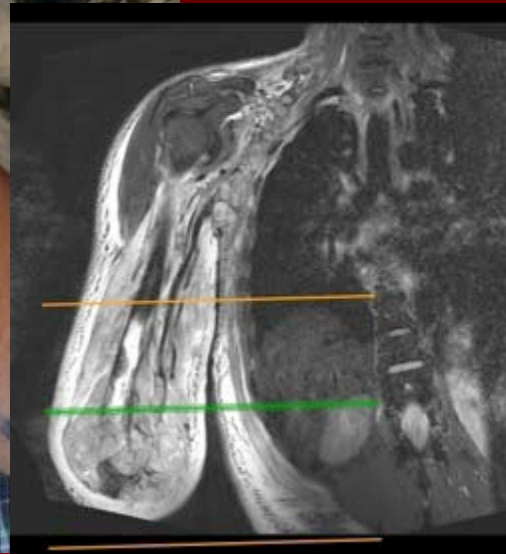


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Soft tissue Lesion



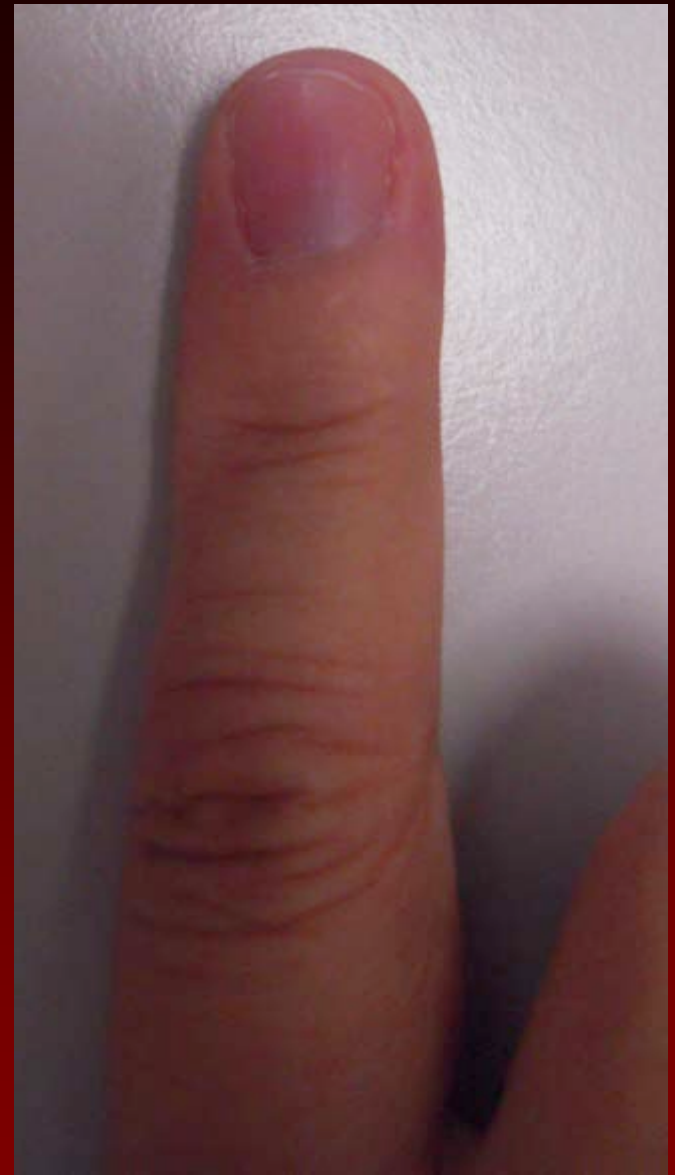




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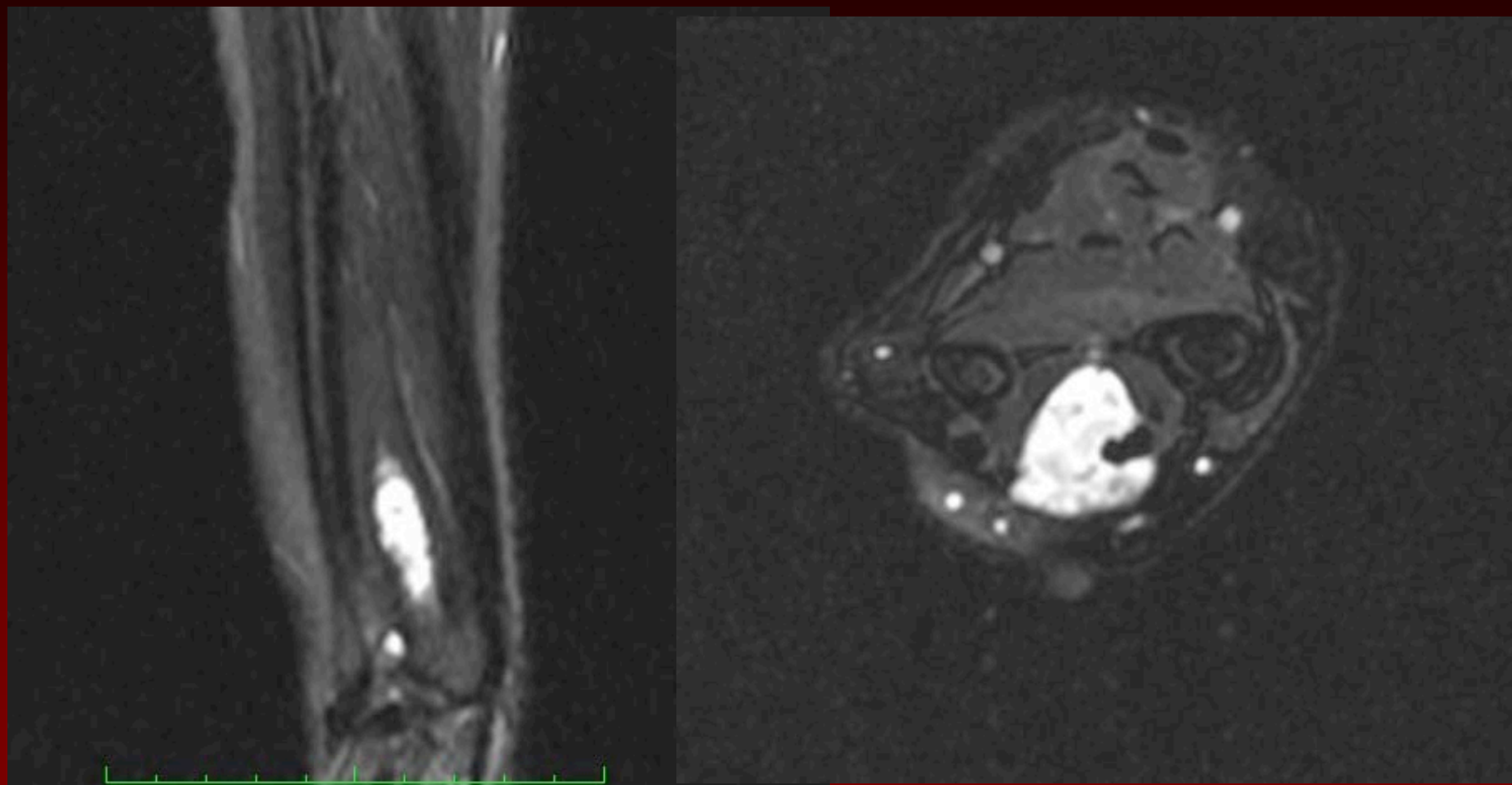


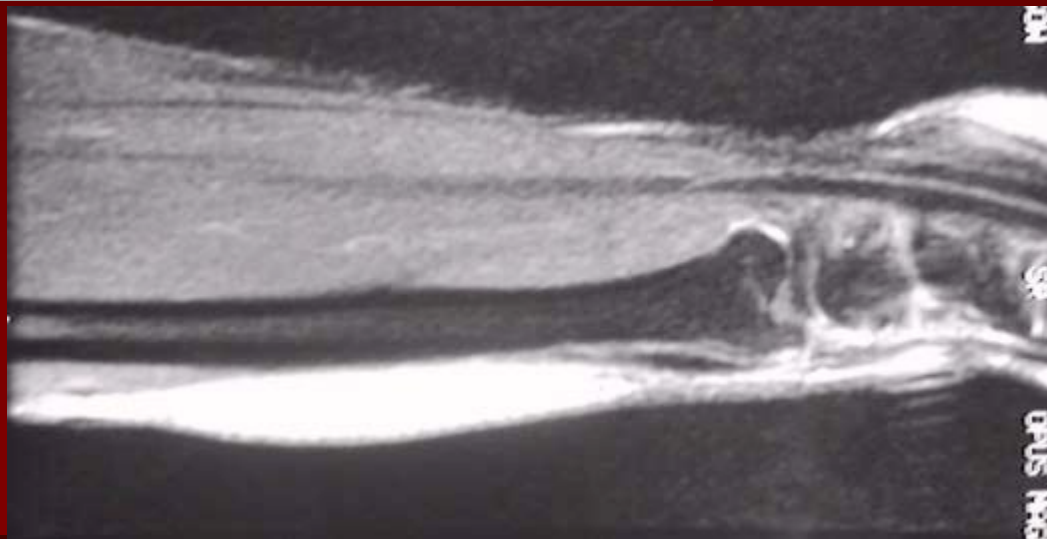


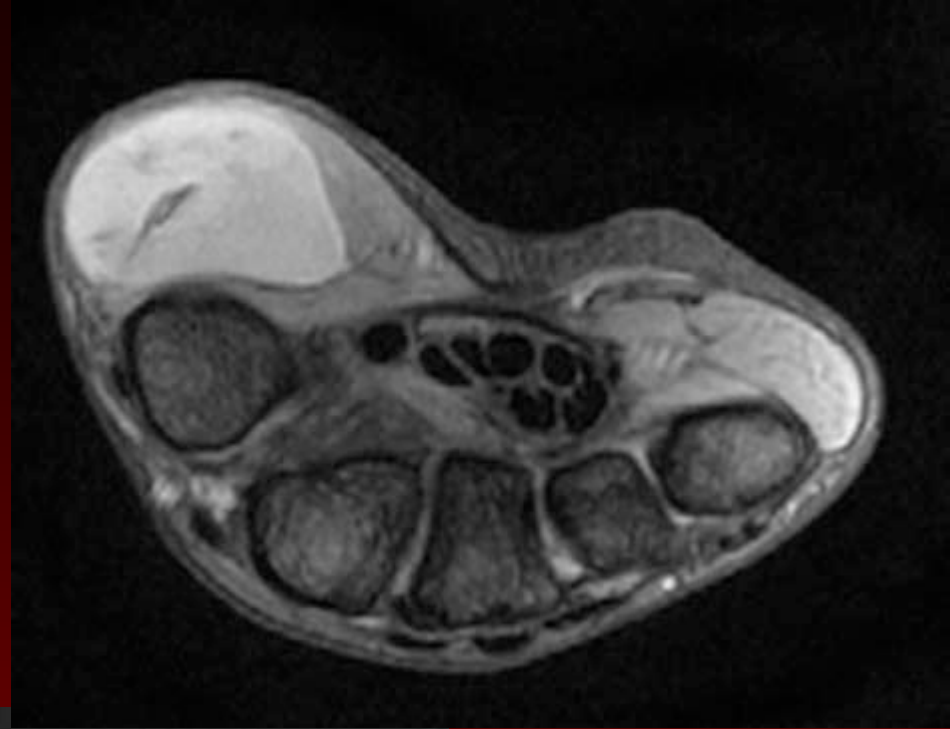
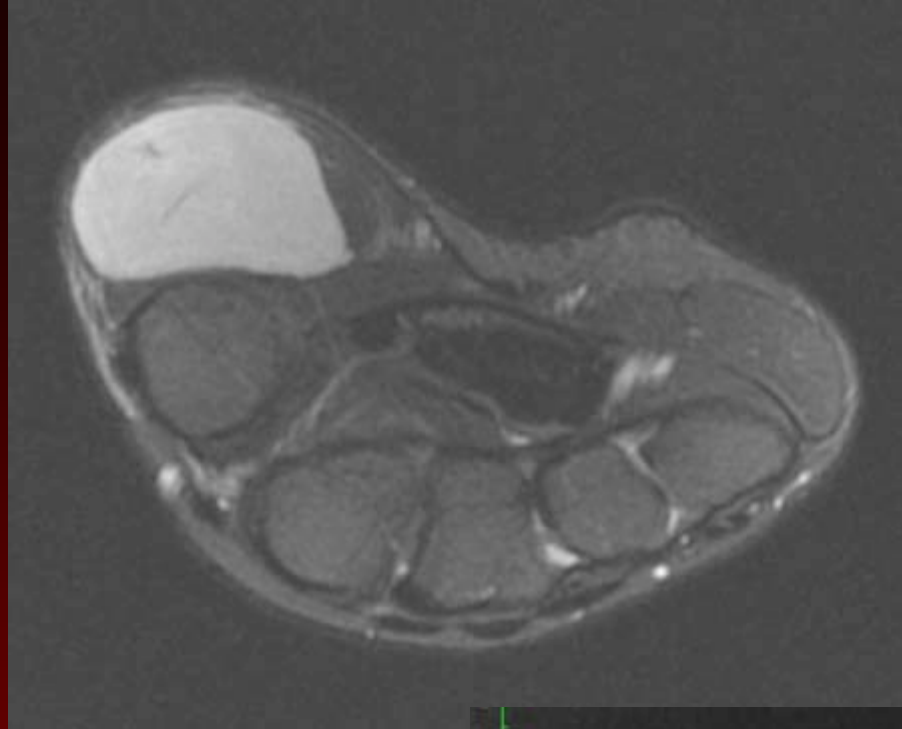


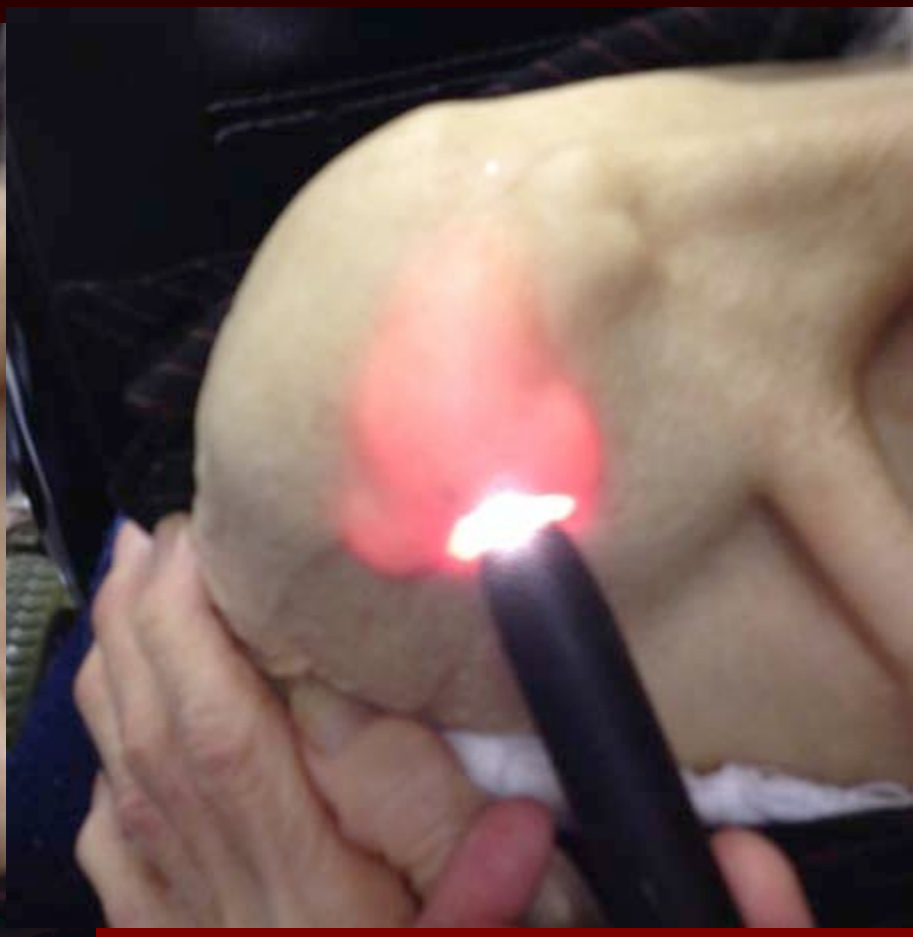


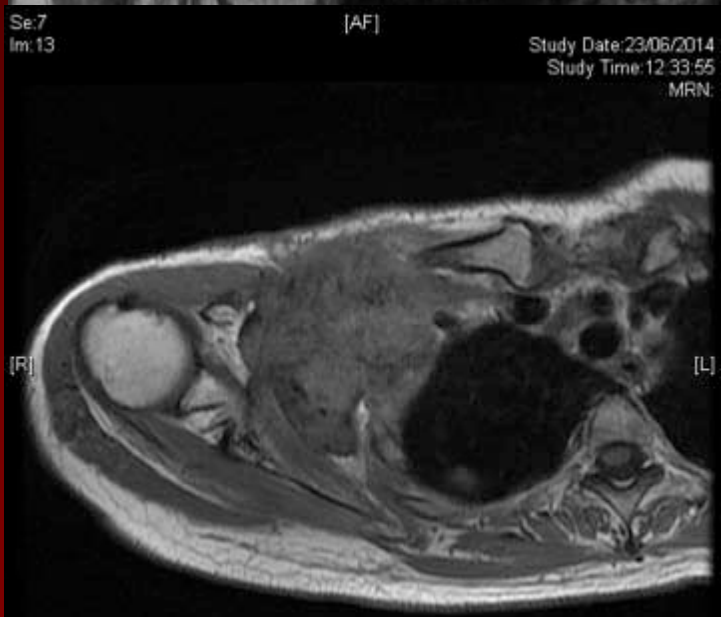




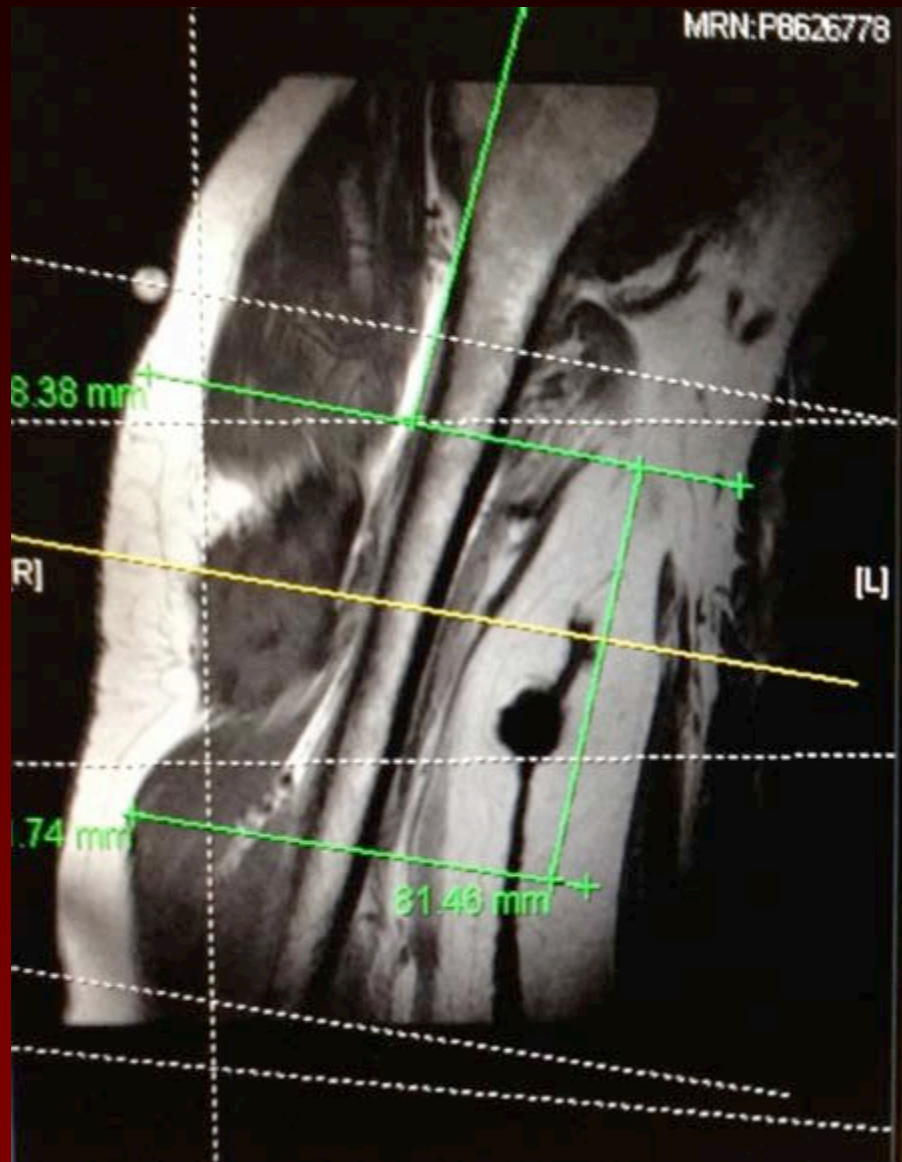






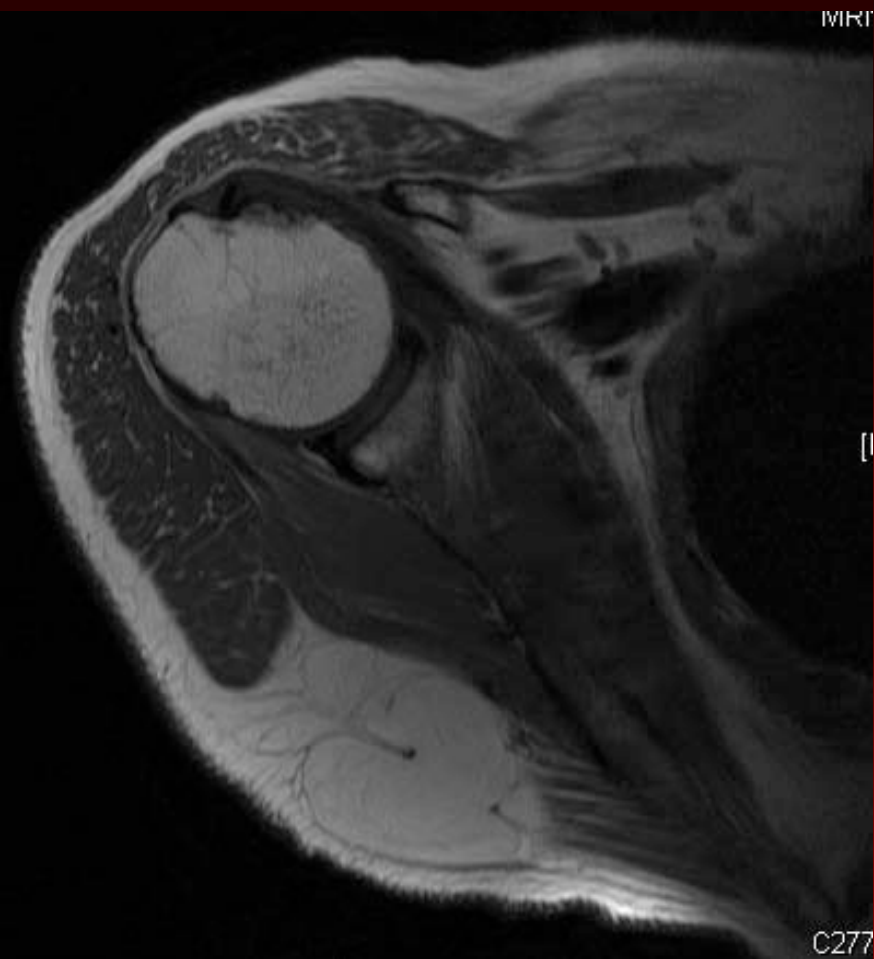


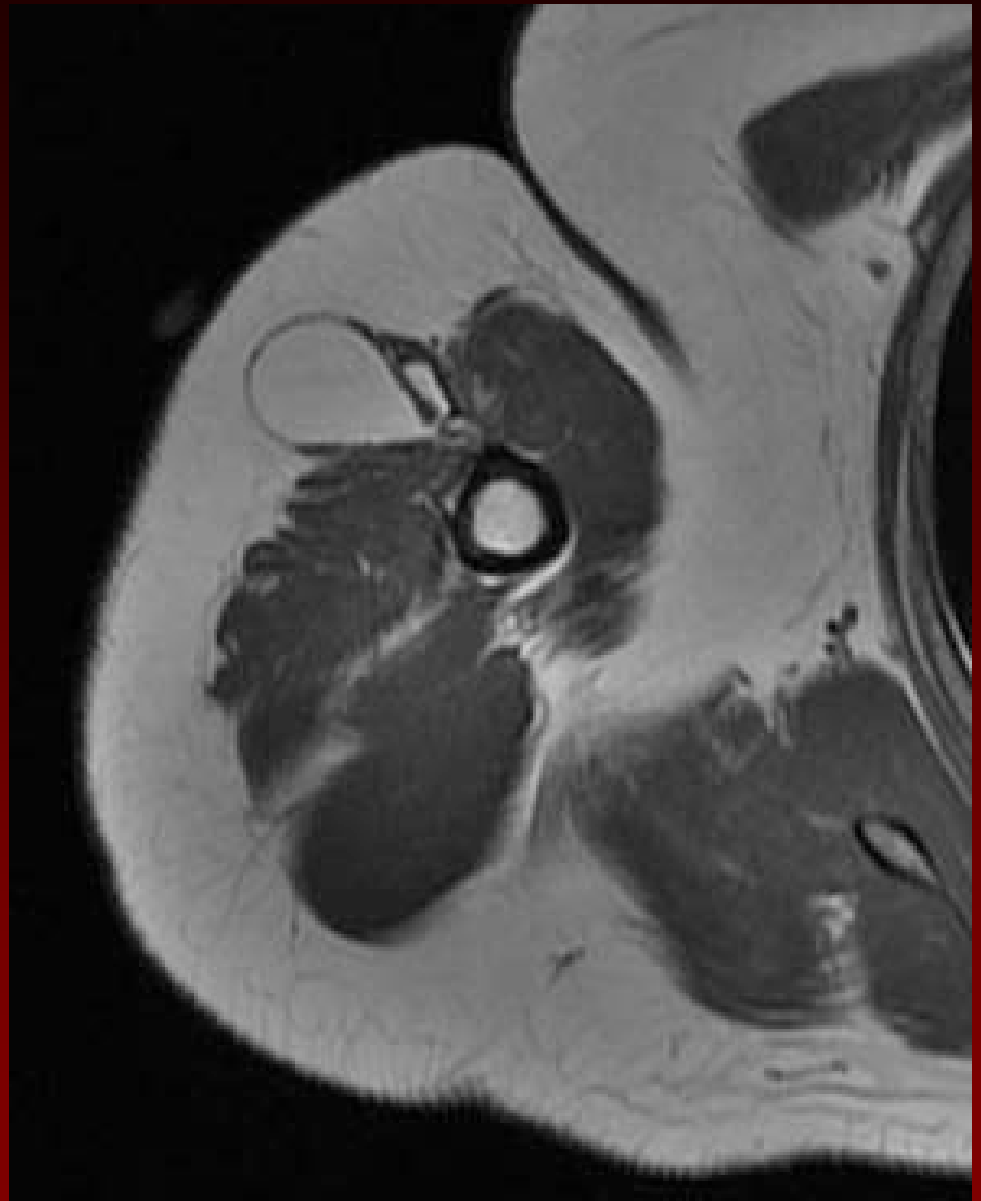
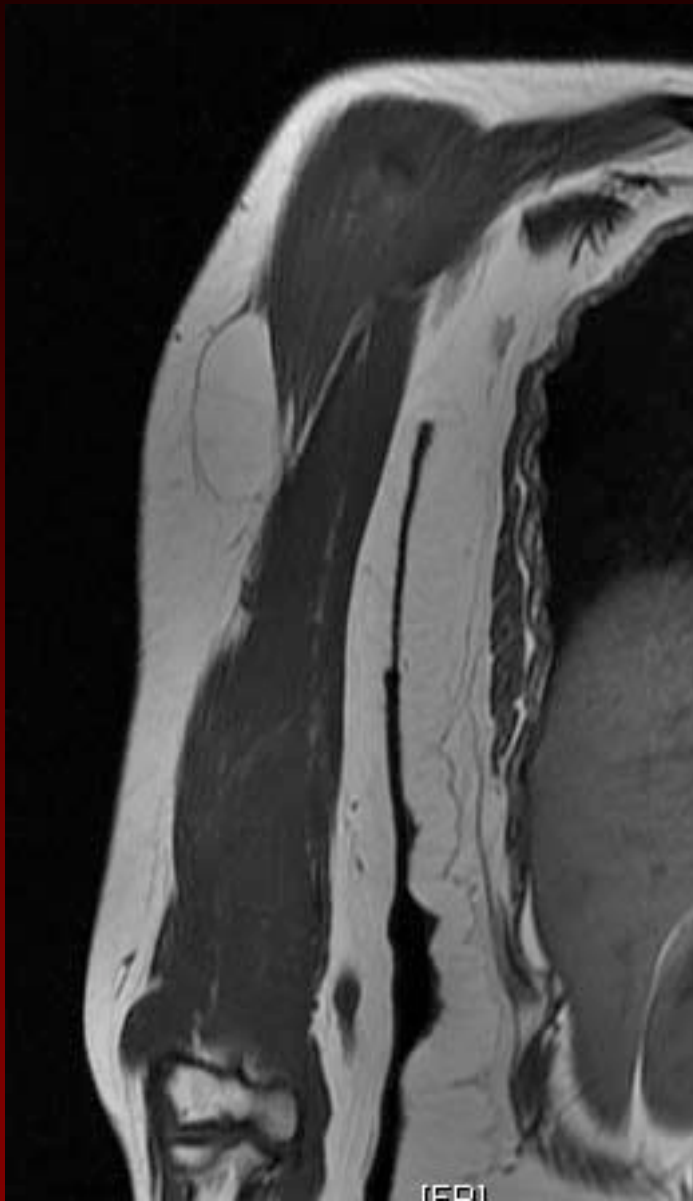
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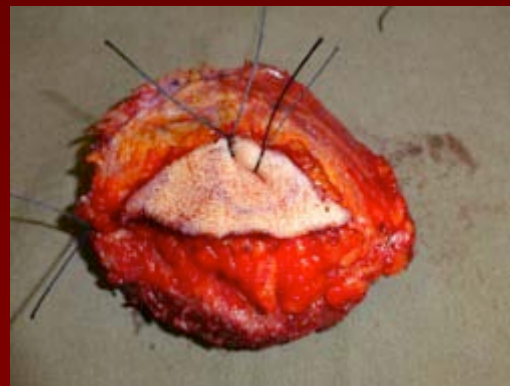
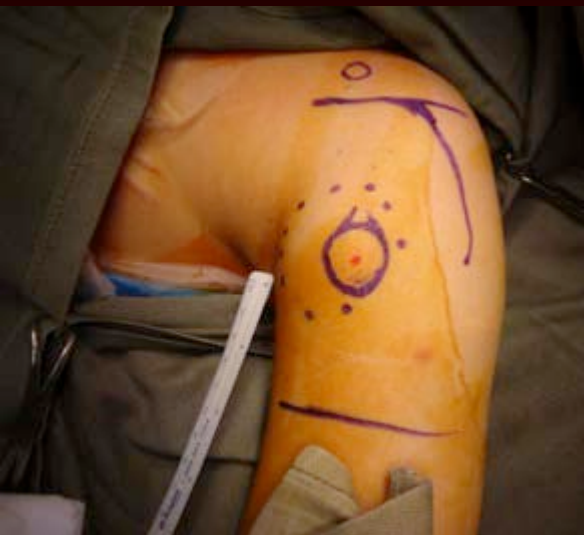


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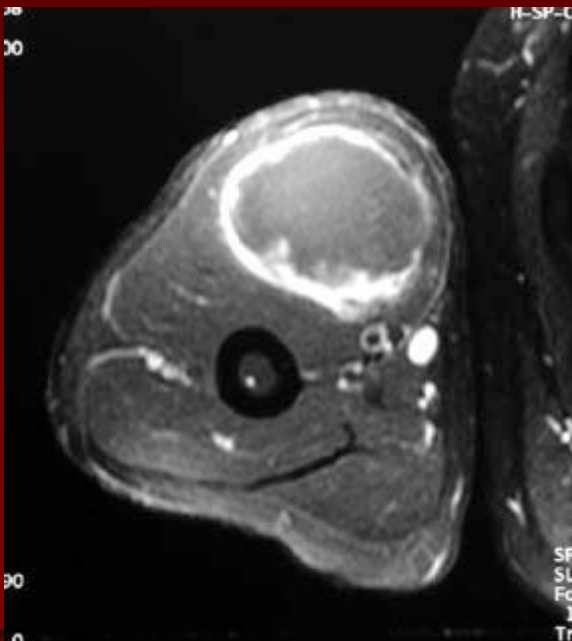
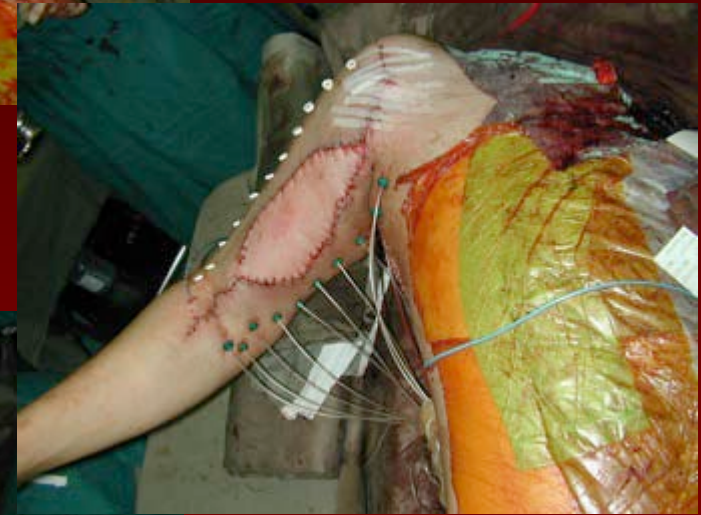


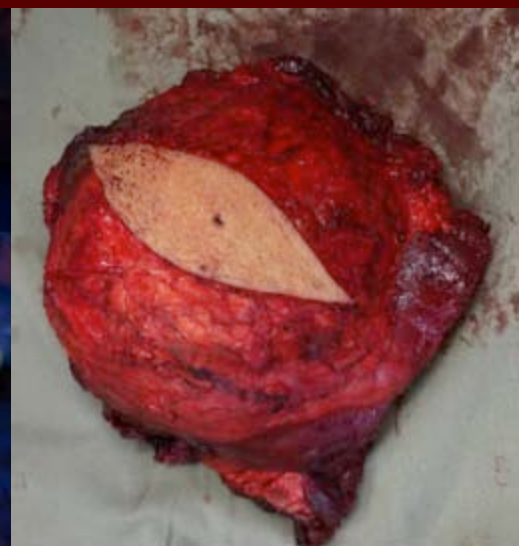
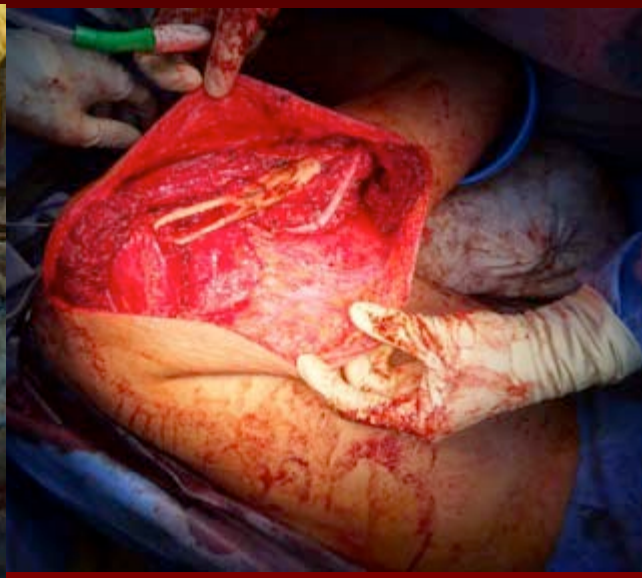
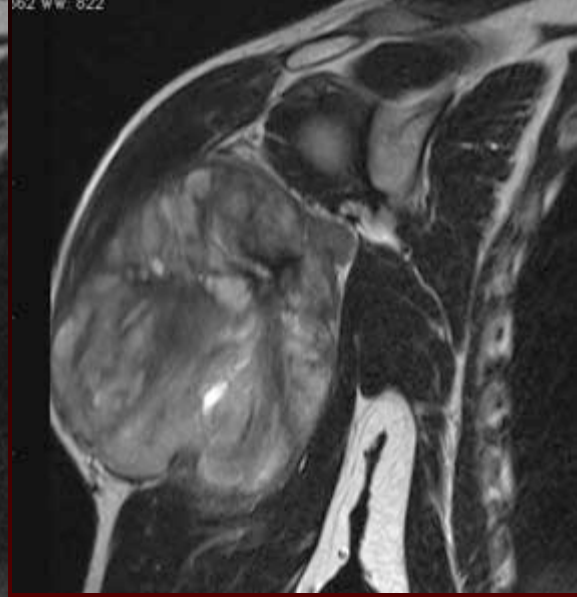
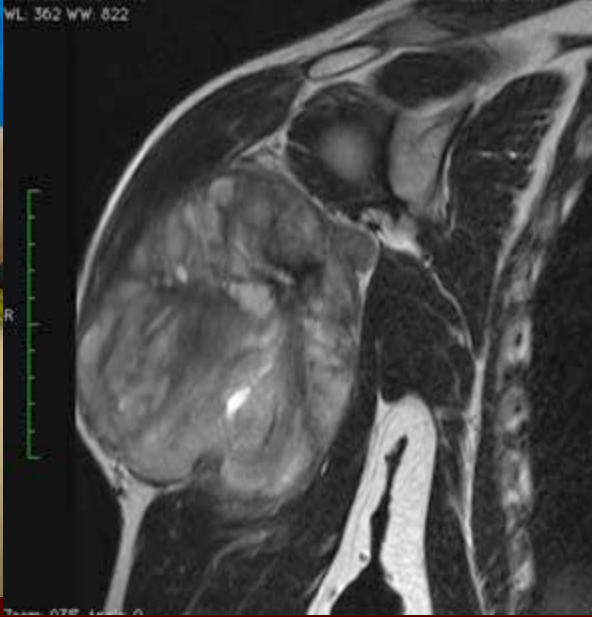




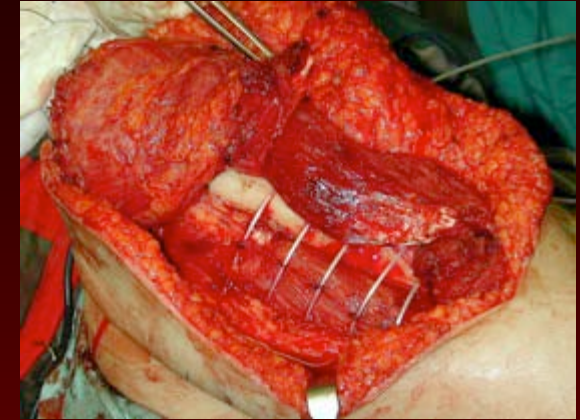
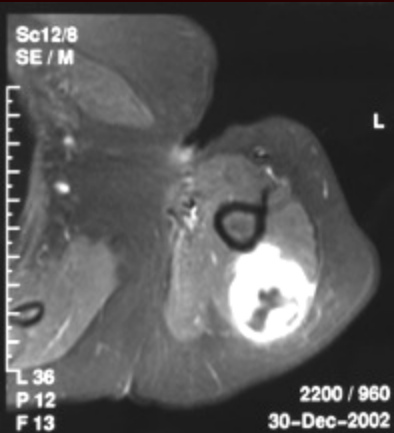


Biceps tumour





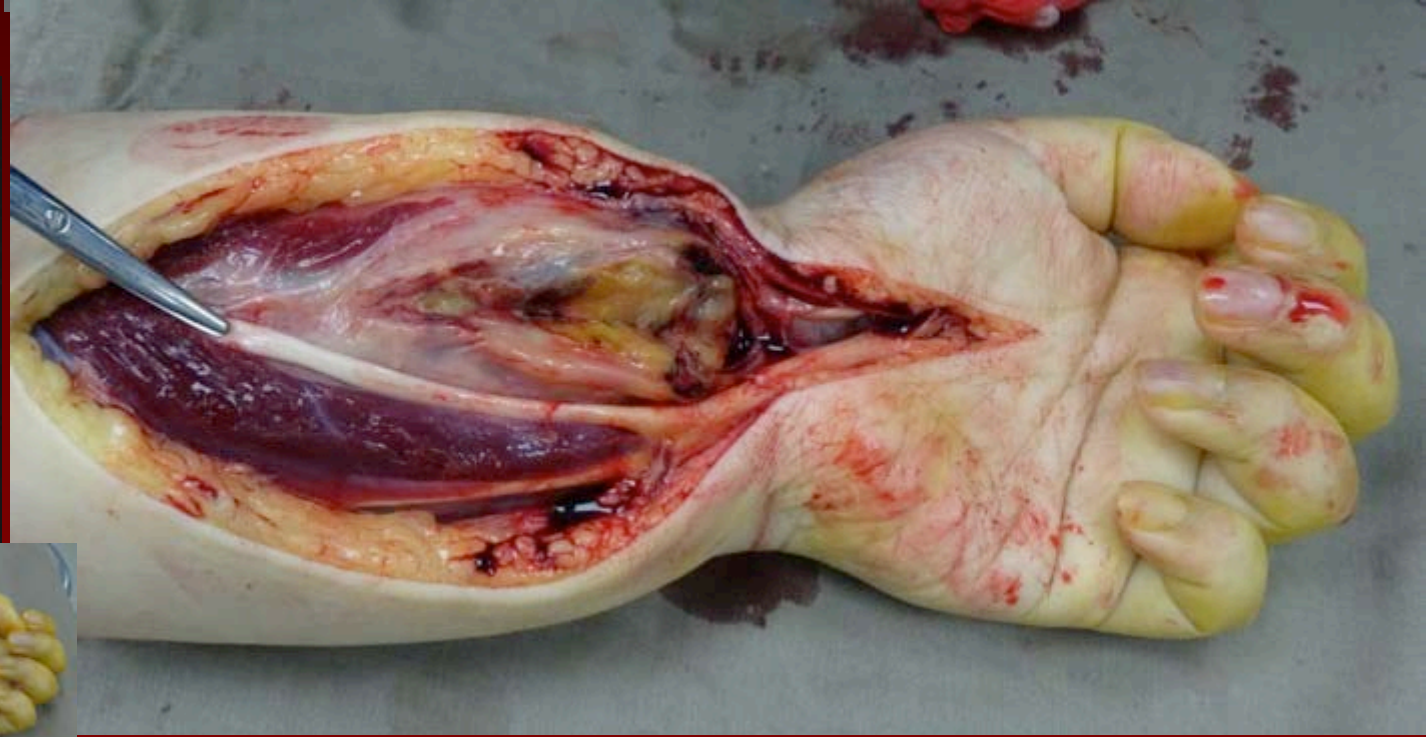
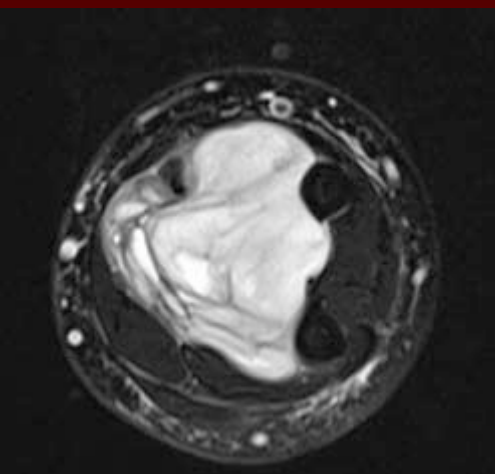
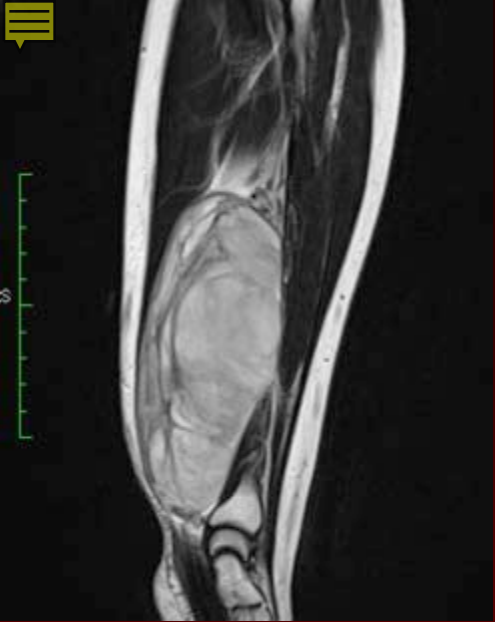
Latissimus dorsi functional transfer

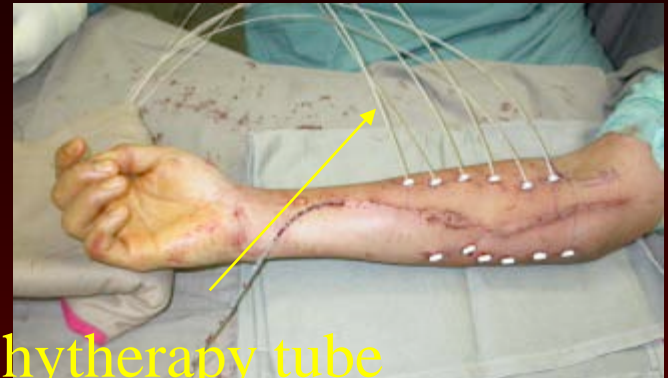


2000-2006, 12 functional muscle reconstruction: 8 pedicled, 4 free

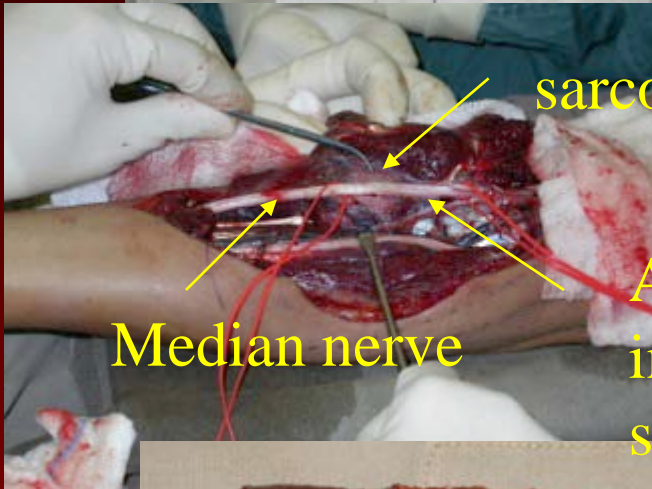
pedicled transfer: muscle power > grade 3

Free muscle transfer + RT: poor result





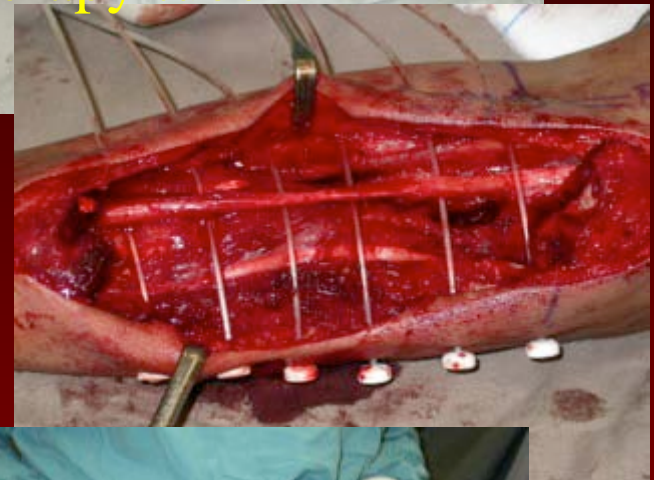
Brachytherapy tube



sarcoma

Median nerve

Anterior interosseous nerve

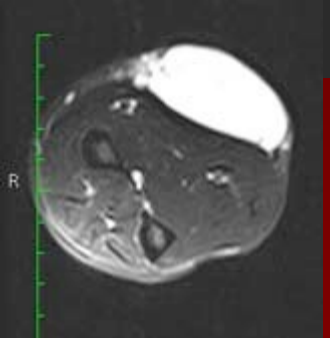


sarcoma



Post irradiation sarcoma





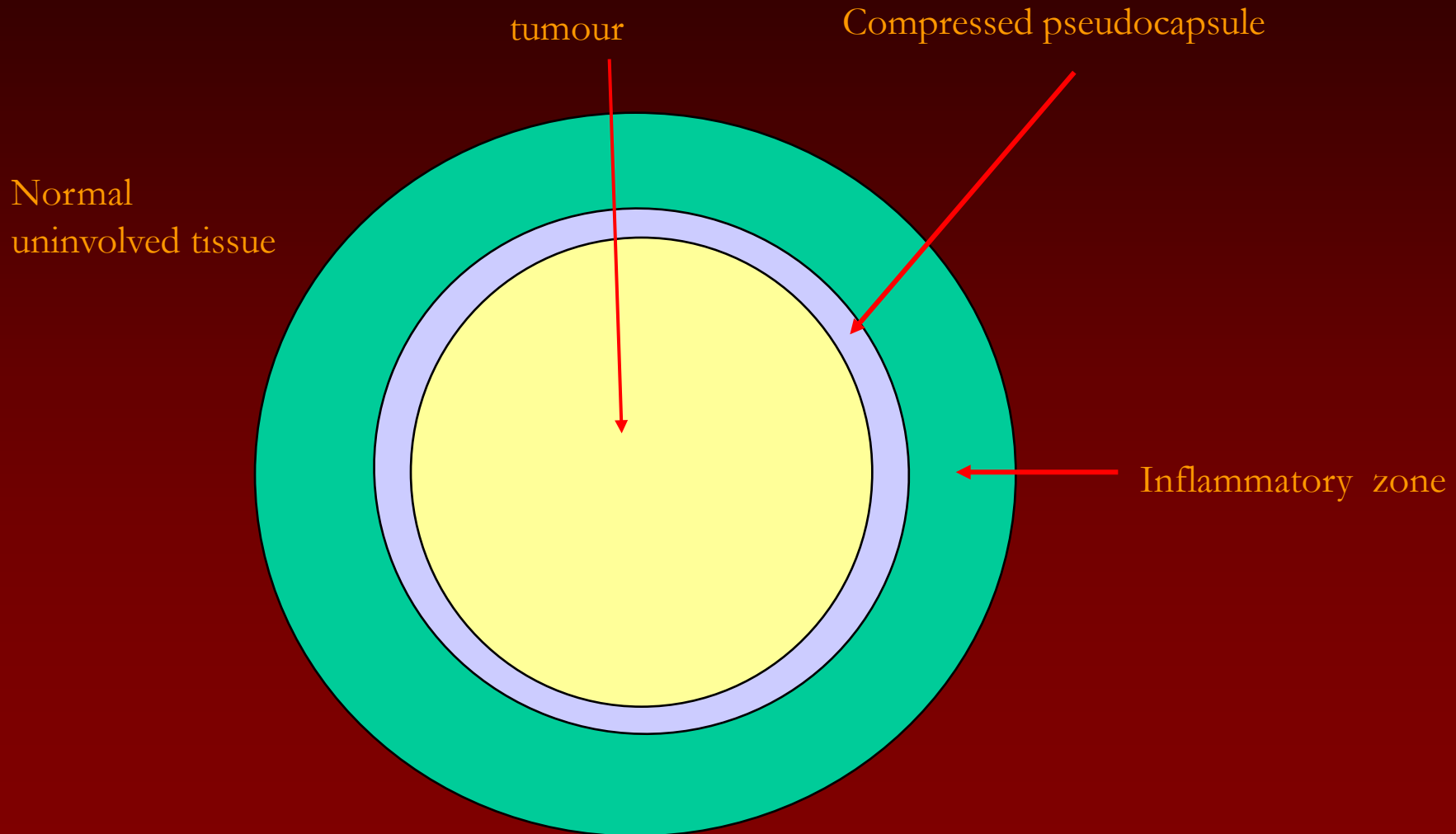
M/77, subcutaneous myxofibrosarcoma left forearm

Priority in UL Tumour Mx

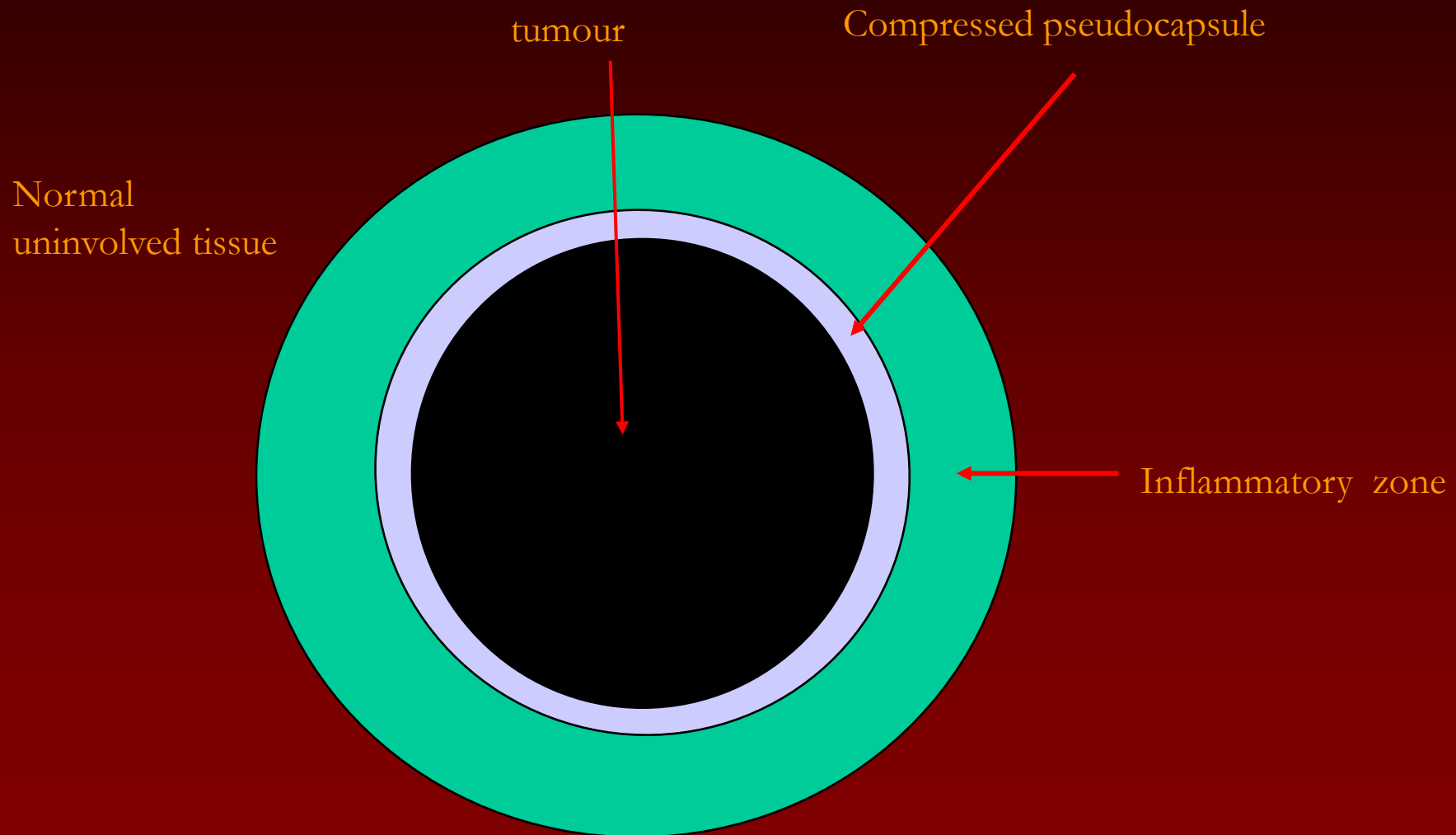
- **Life Saving**
 - **Limb Sparing**
 - **Joint Preserving**
 - **Function**
 - » **cosmesis**



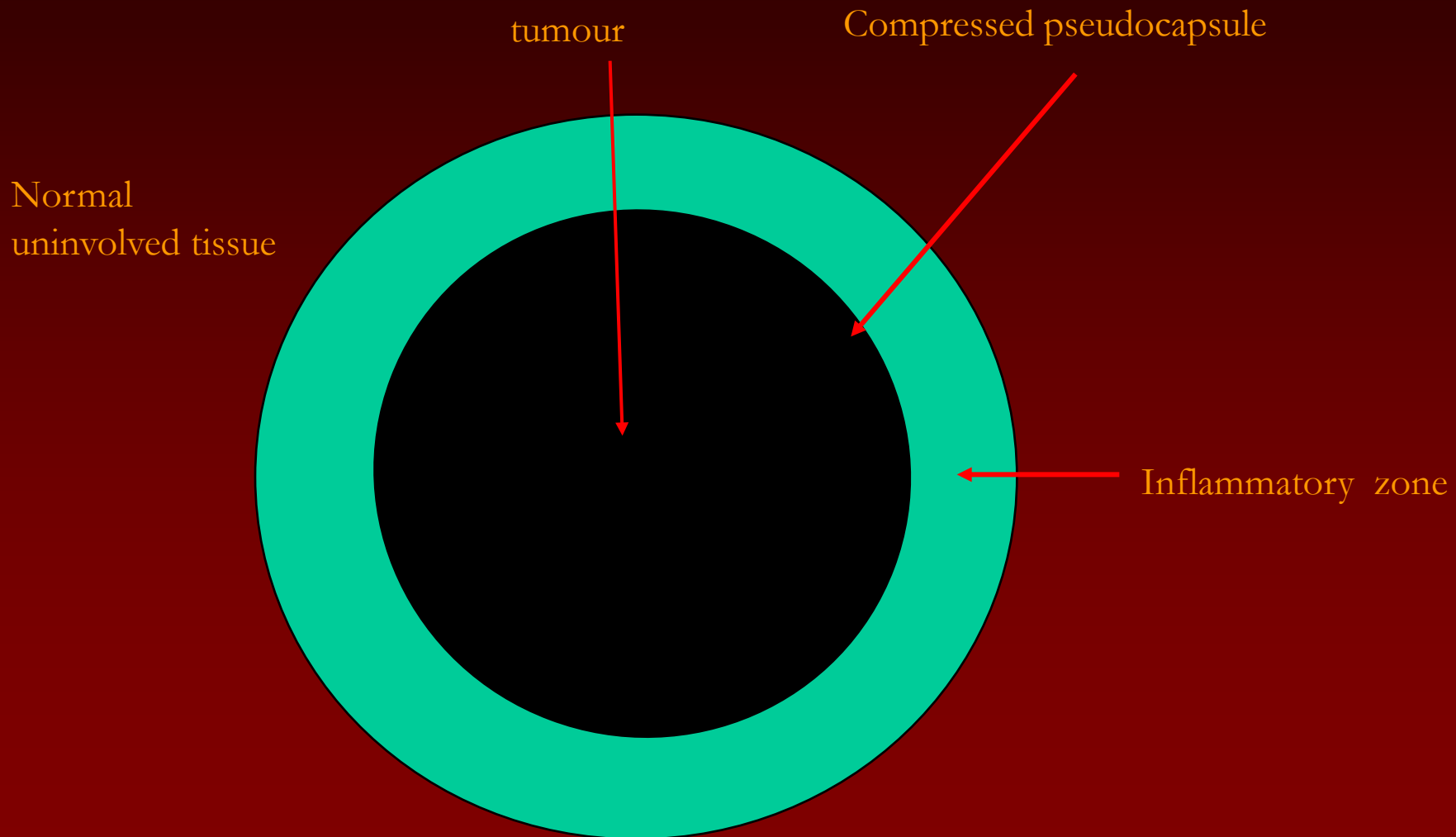
Patho-anatomy of Sarcoma



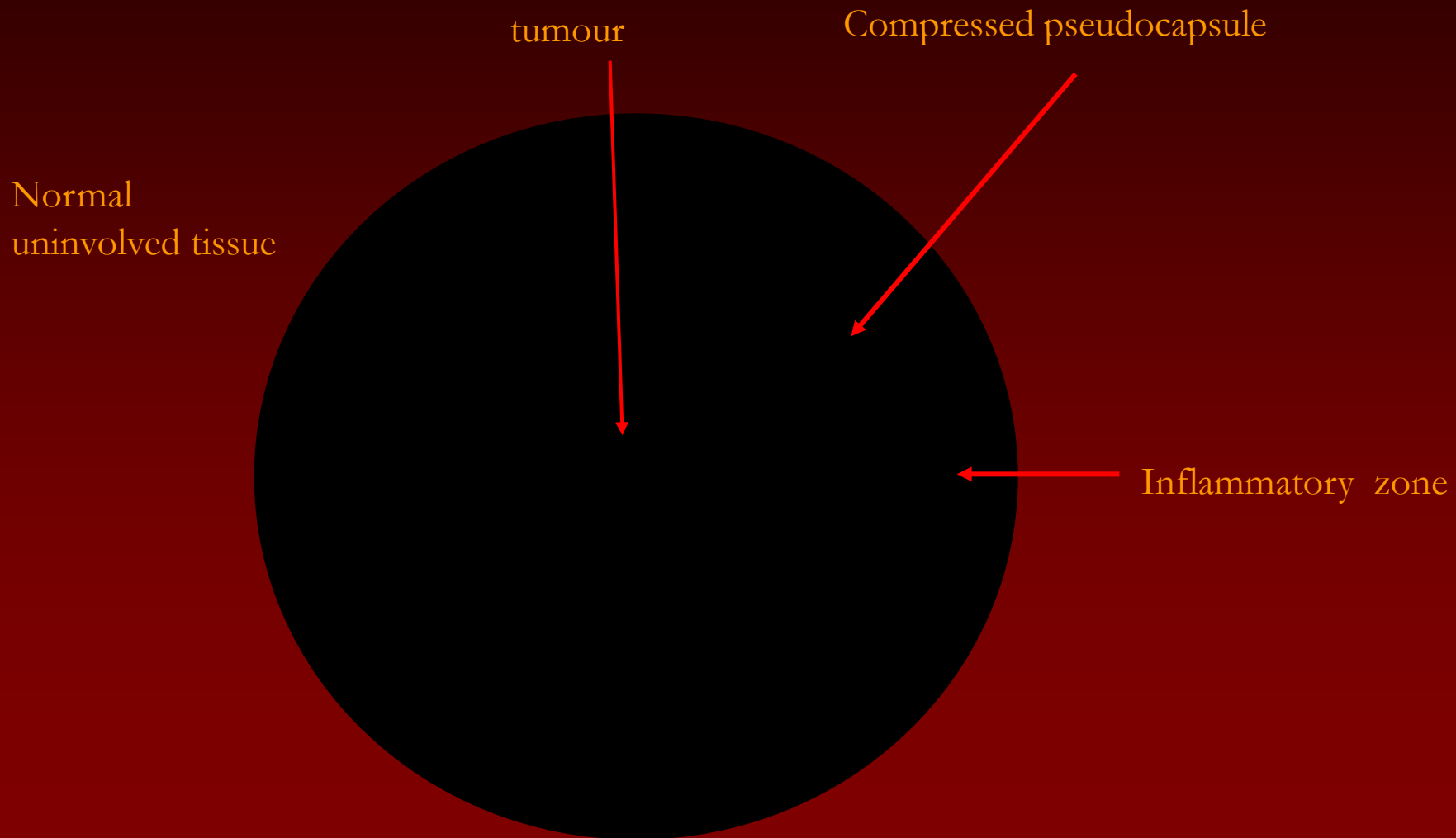
Intra-lesional Excision



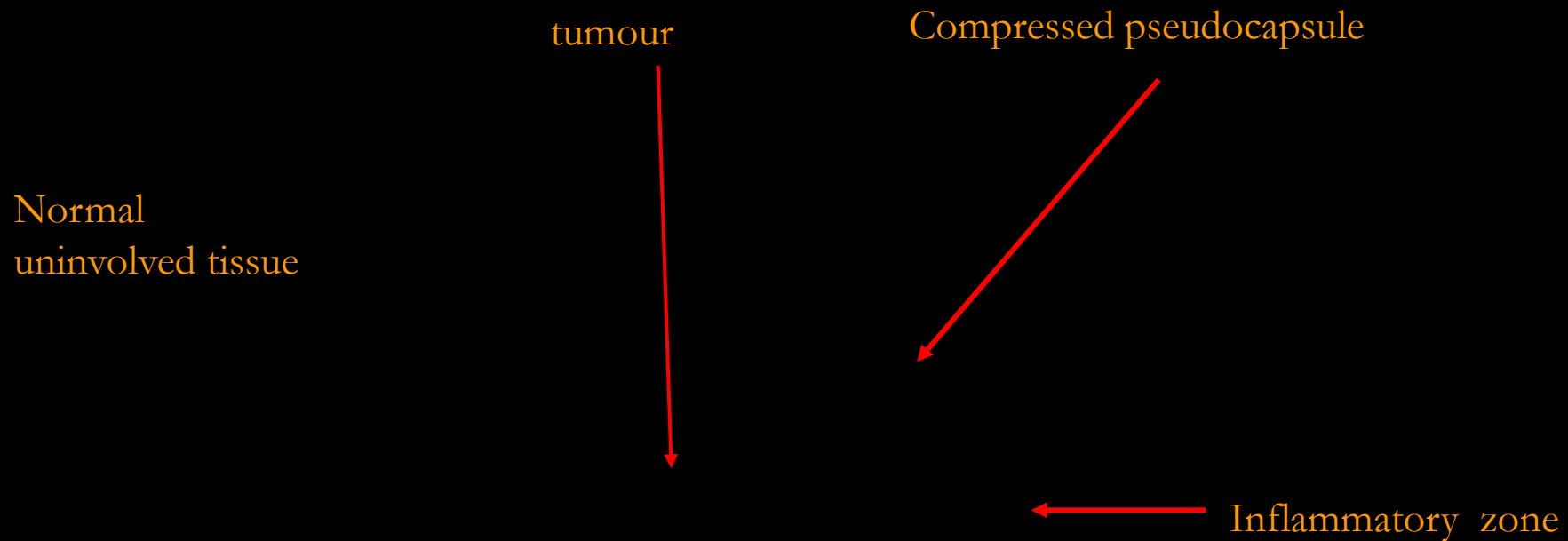
Marginal Excision



Wide Excision



Radical Compartmental Excision





Management of malignant lesion in upper limb

wide margin = function loss



What are the indications for Limb amputation

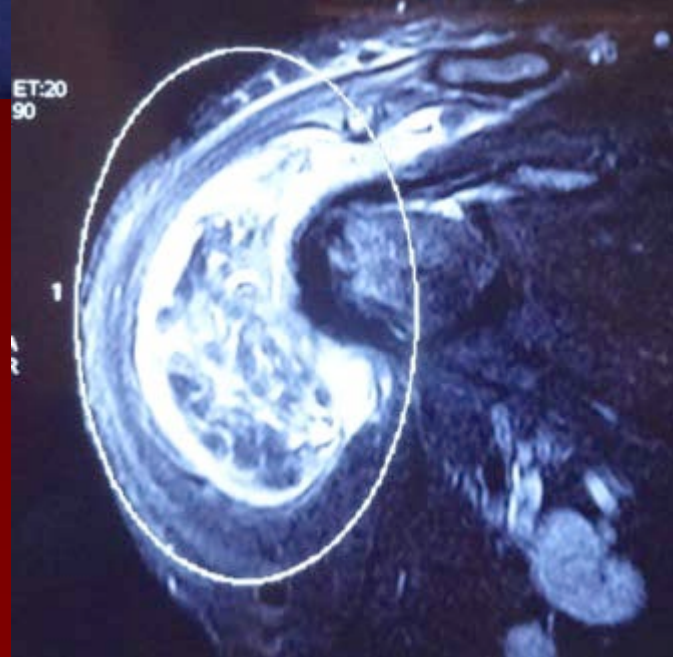
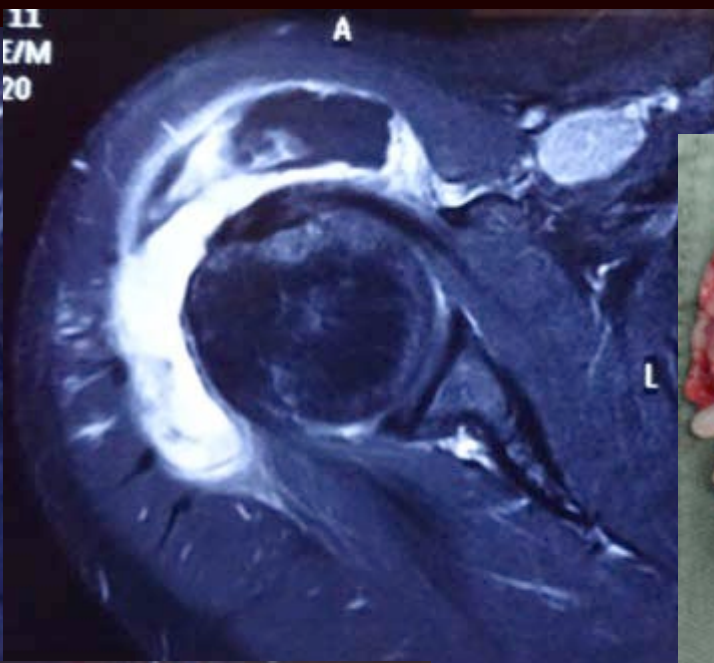
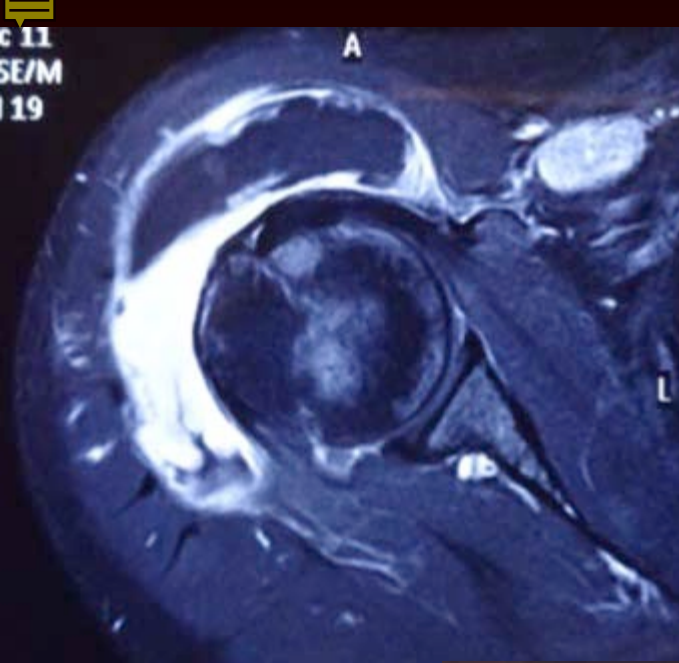
- **Infection (absolute)**
- **Extensive contamination making useful reconstruction impossible**
- **Neurovascular involvement resulting in useless limb after limb sparing**
 - **TK Song Major Blood Vessel Reconstruction During Sarcoma Surgery Arch Surg vol144(No.9) 2009:**
 - **Arterial patency 83%, Venous patency 78% Limb Salvage 93%**
- ❖ **Patient fitness for extensive reconstruction**
- **Surgeon is not capable to do limb sparing**



Joint Lesion



c 11
SE/M
19



Bone Lesion



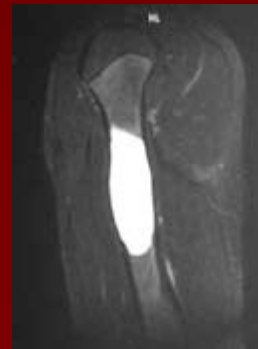
Clinical Assessment

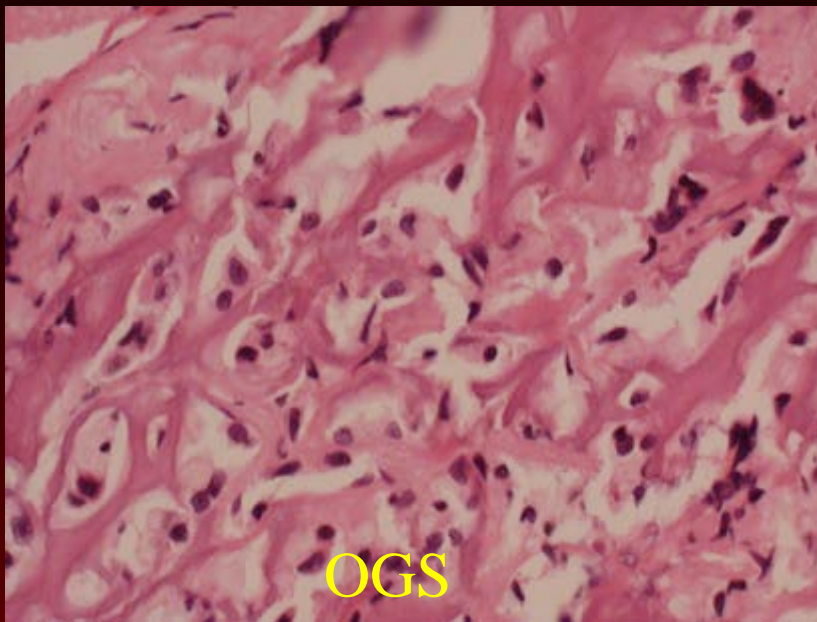
- **Aggressive looking vs Benign looking**
- **Aggressive looking**
 - **Further investigation**
- **Benign looking**
 - **Observe**
 - **Investigate (history and examination)**
 - **Treatment (biomechanical reason)**



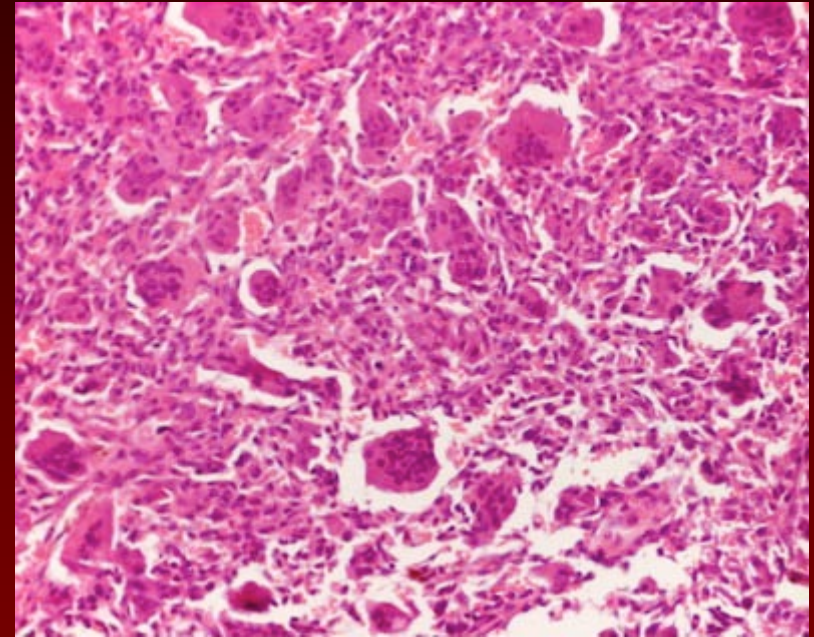
Matrix of lesion

- **Bone**
 - **Osteogenic sarcoma, bone island**
- **Calification**
 - **Enchondroma, chondrosarcoma**
- **Others**
 - **Fibrous, vascular, secondary, blood, lymphoid**
 - **Cyst**

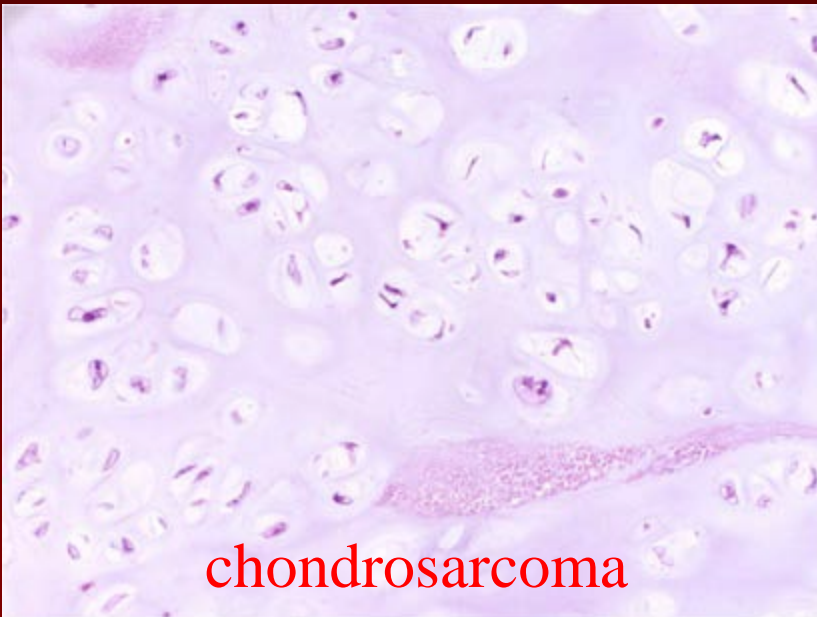




OGS

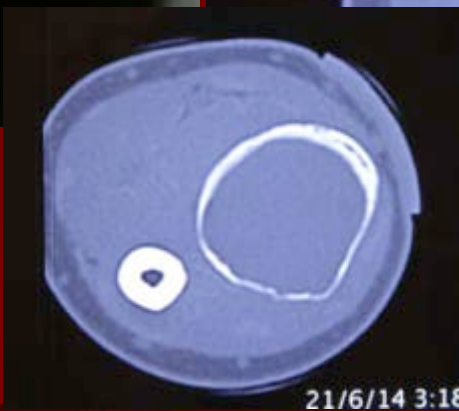
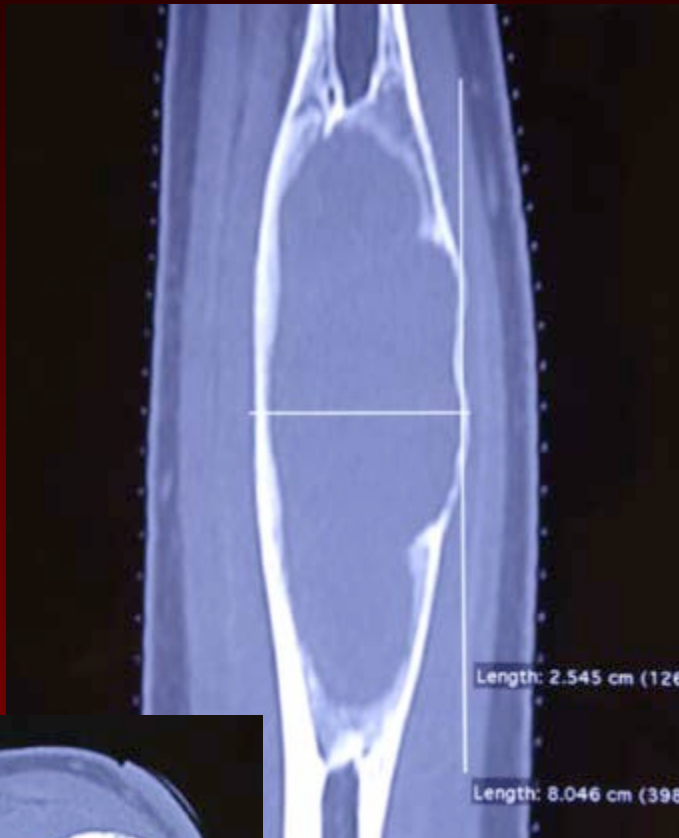


GCT



chondrosarcoma

Simple Bone Cyst

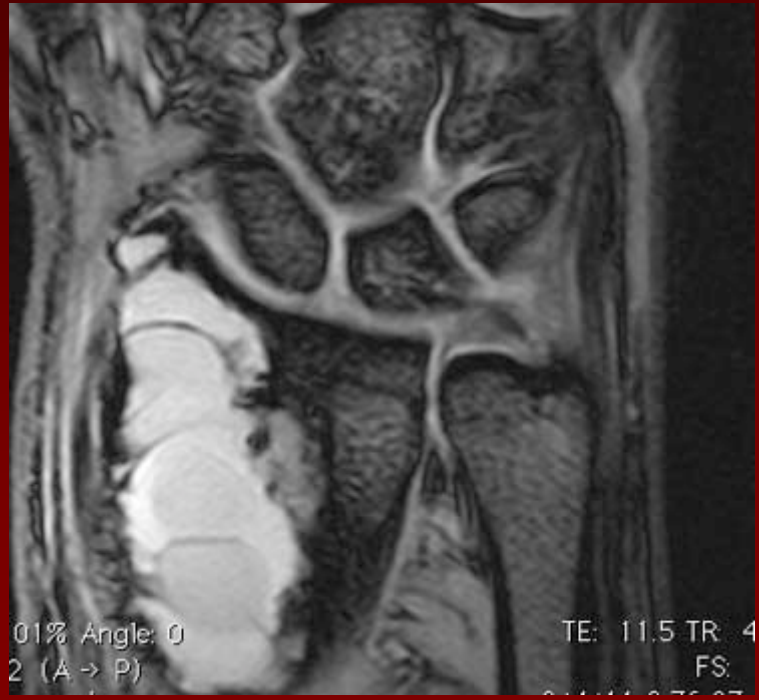
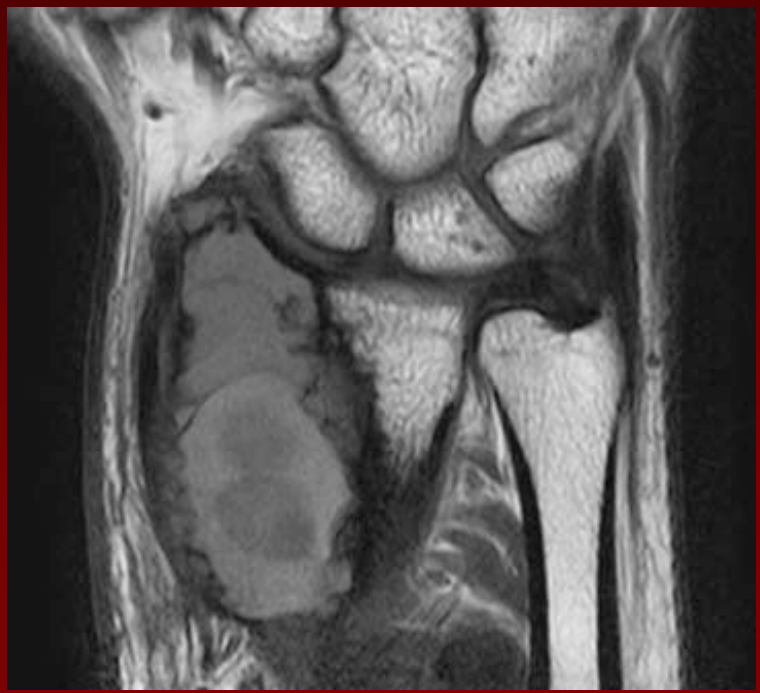
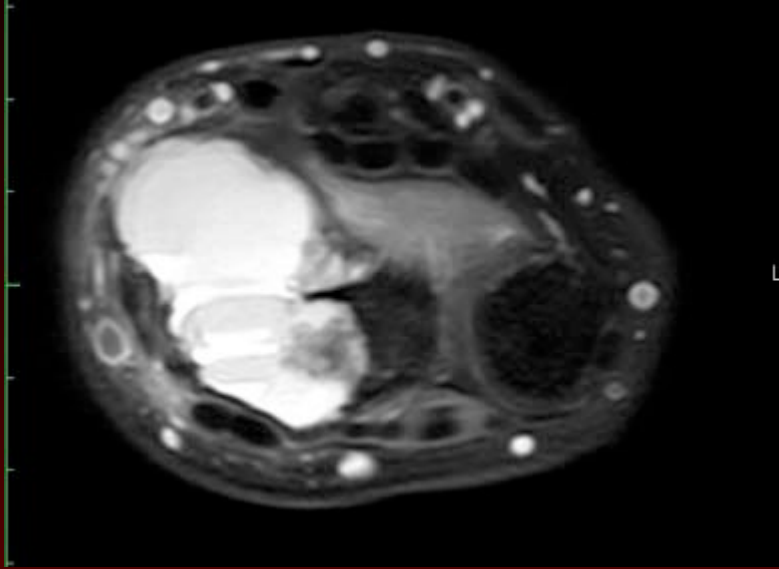
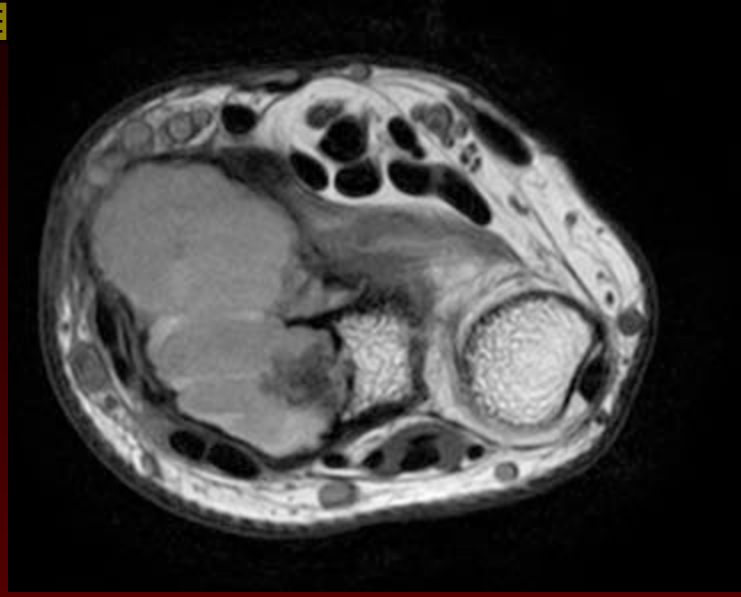


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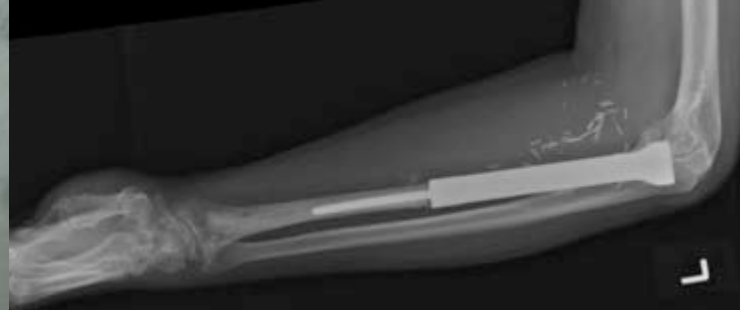
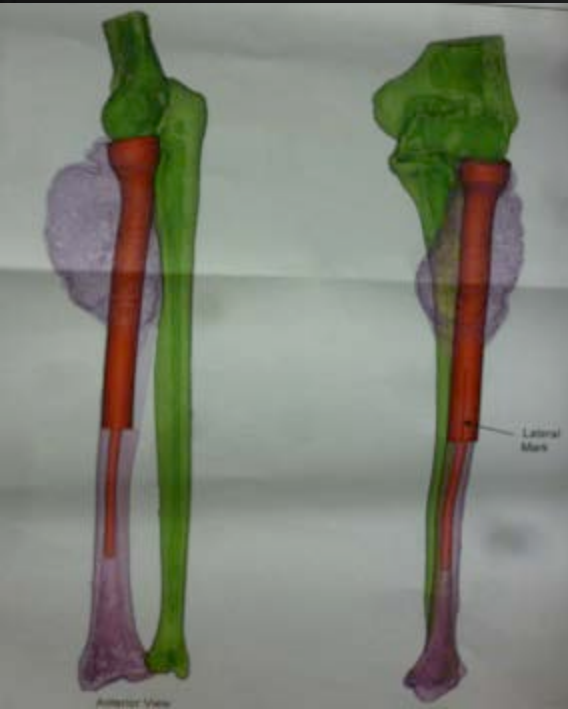
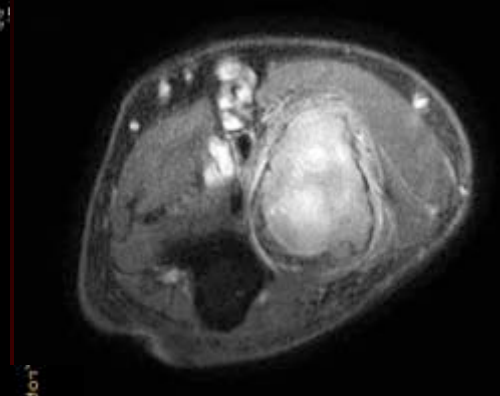
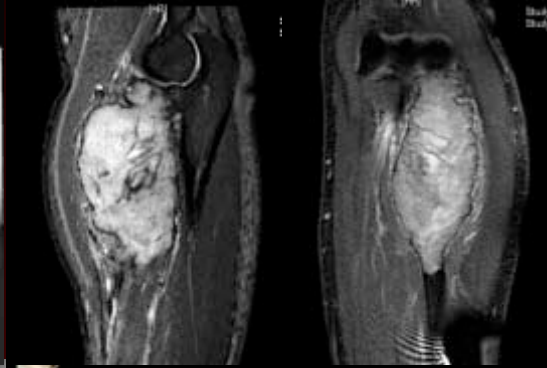
Giant cell tumour of bone

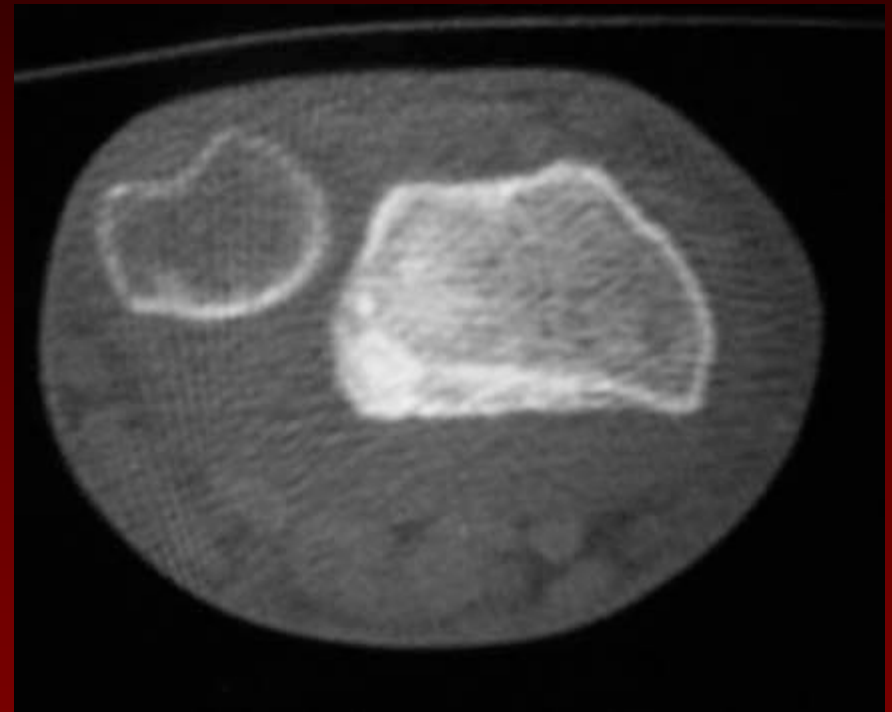


- **Around 40 yrs old**
- **Juxta-articular eccentric**
- **Wide defined margin without osteo-sclerotic rim**
- **D/D: ABC chondroblastoma**

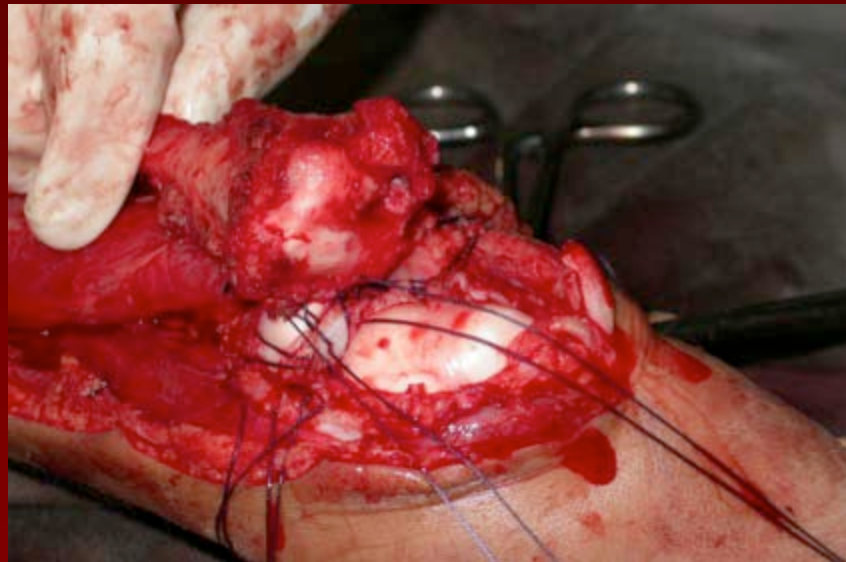
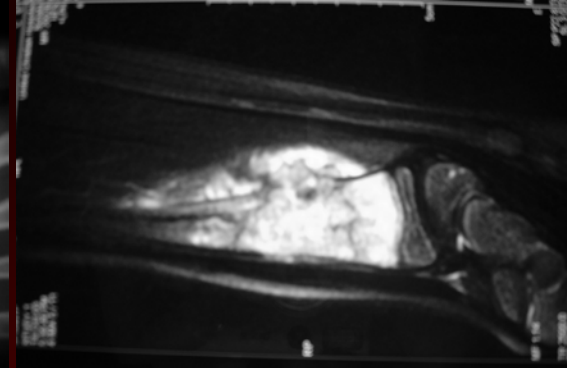
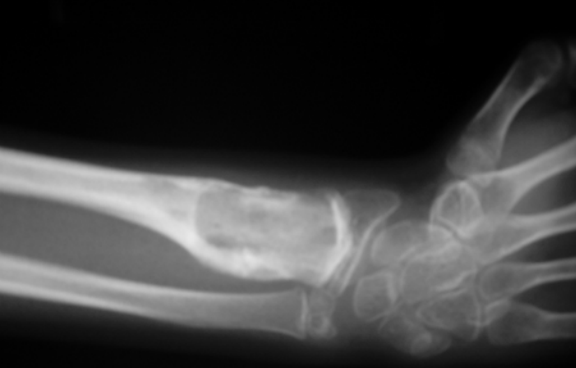




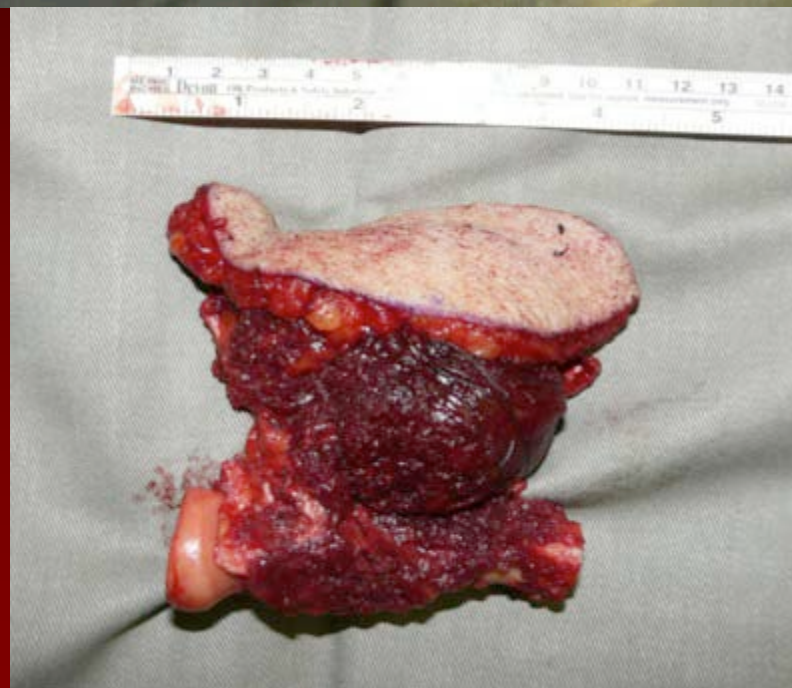




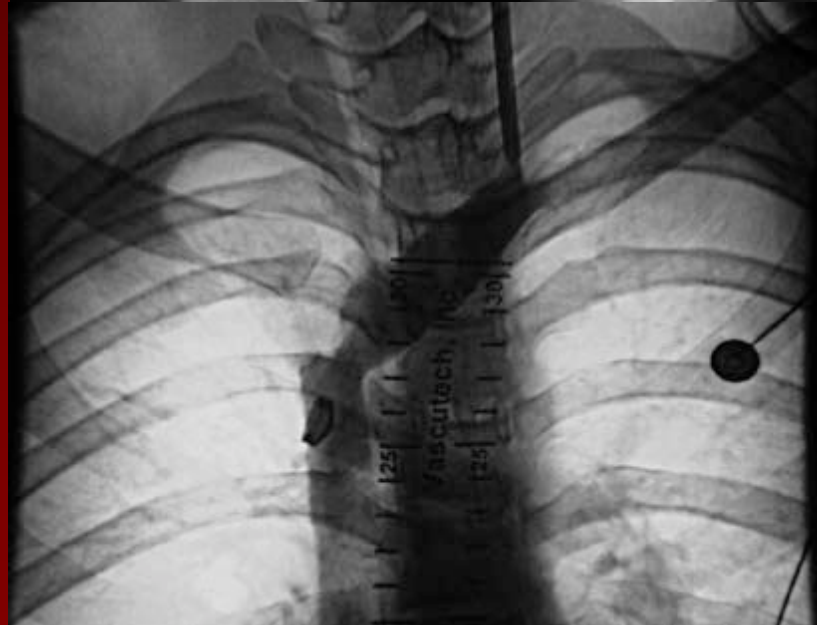


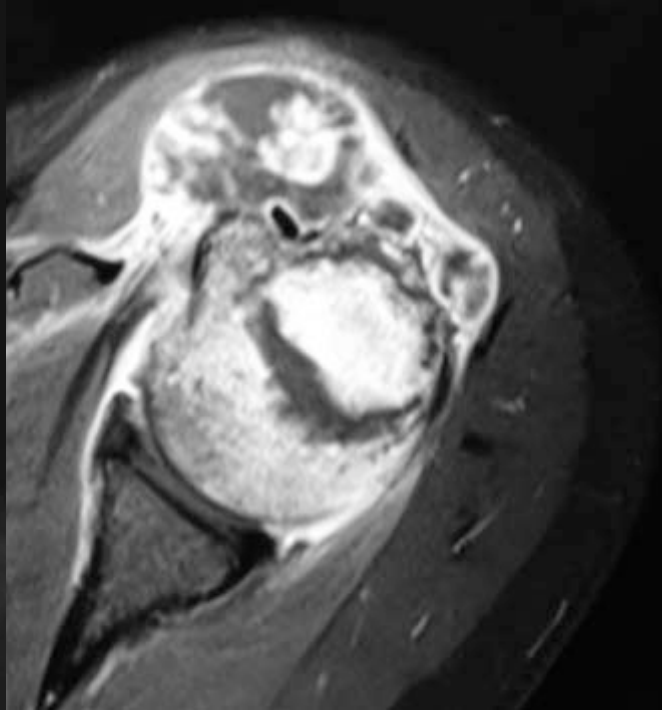
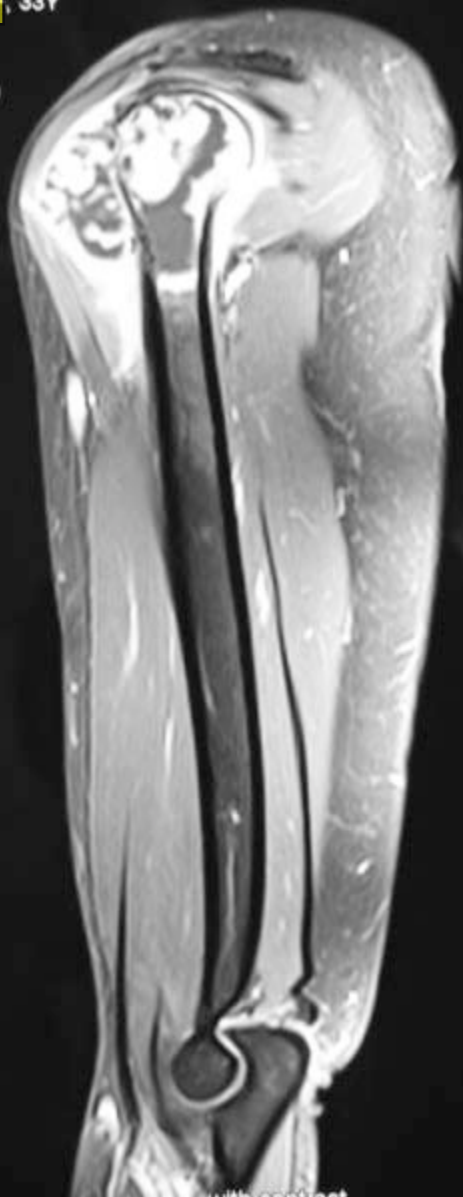


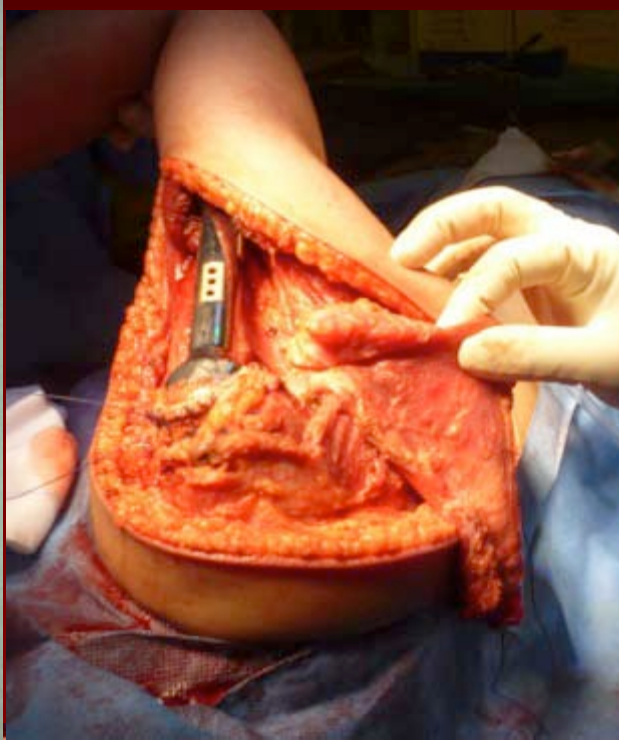
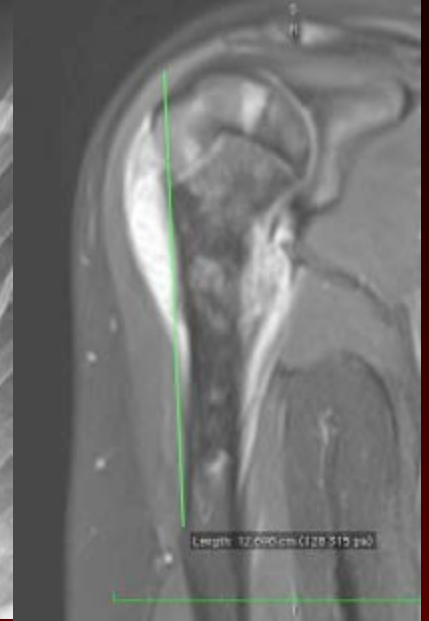


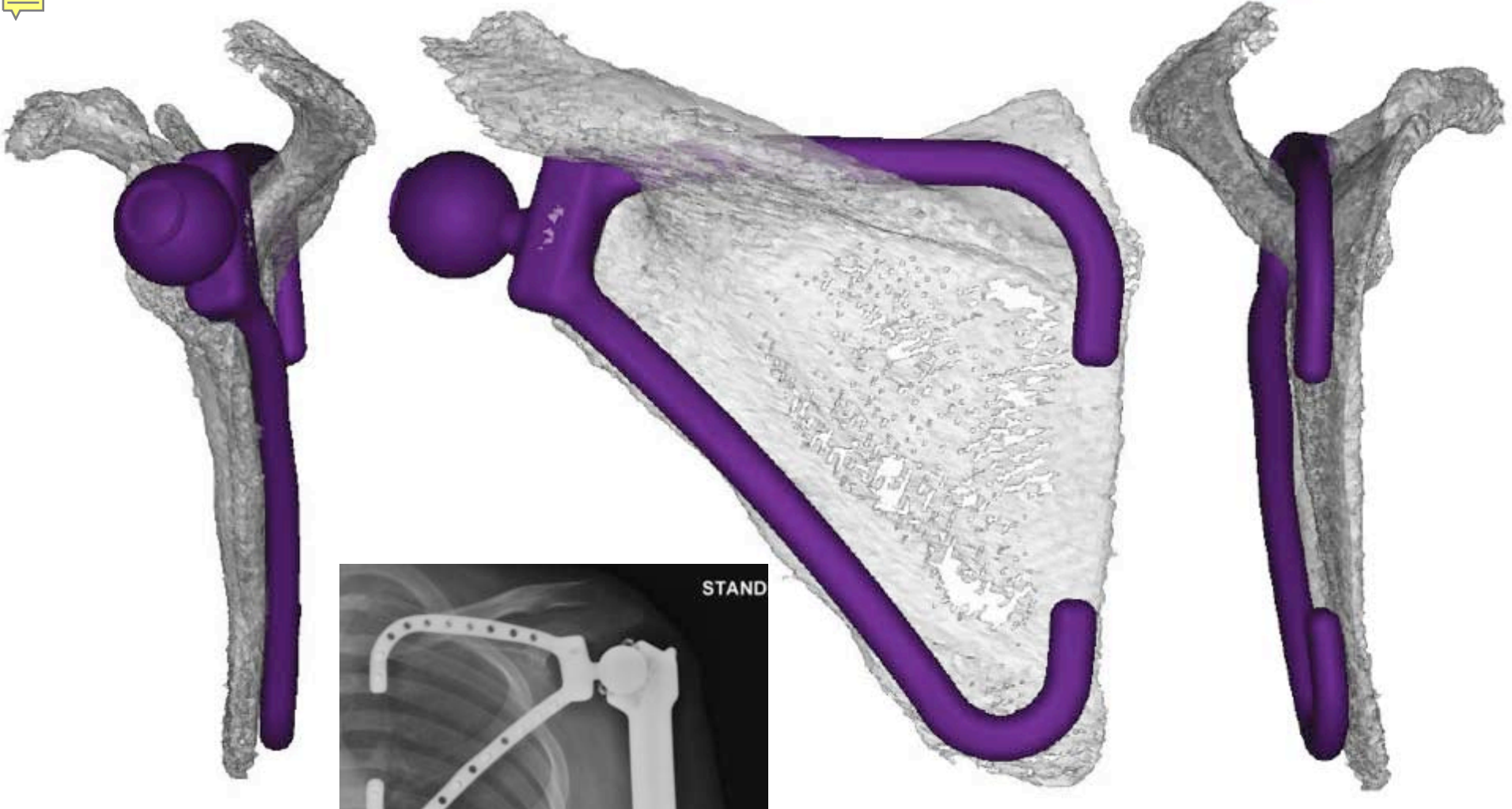


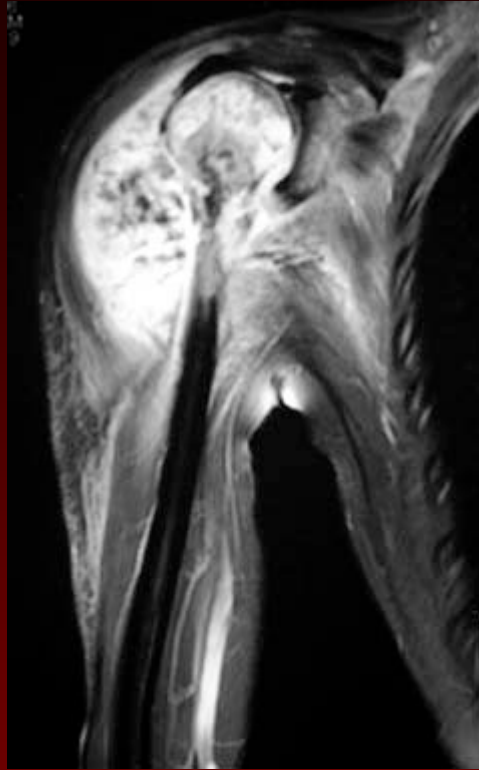




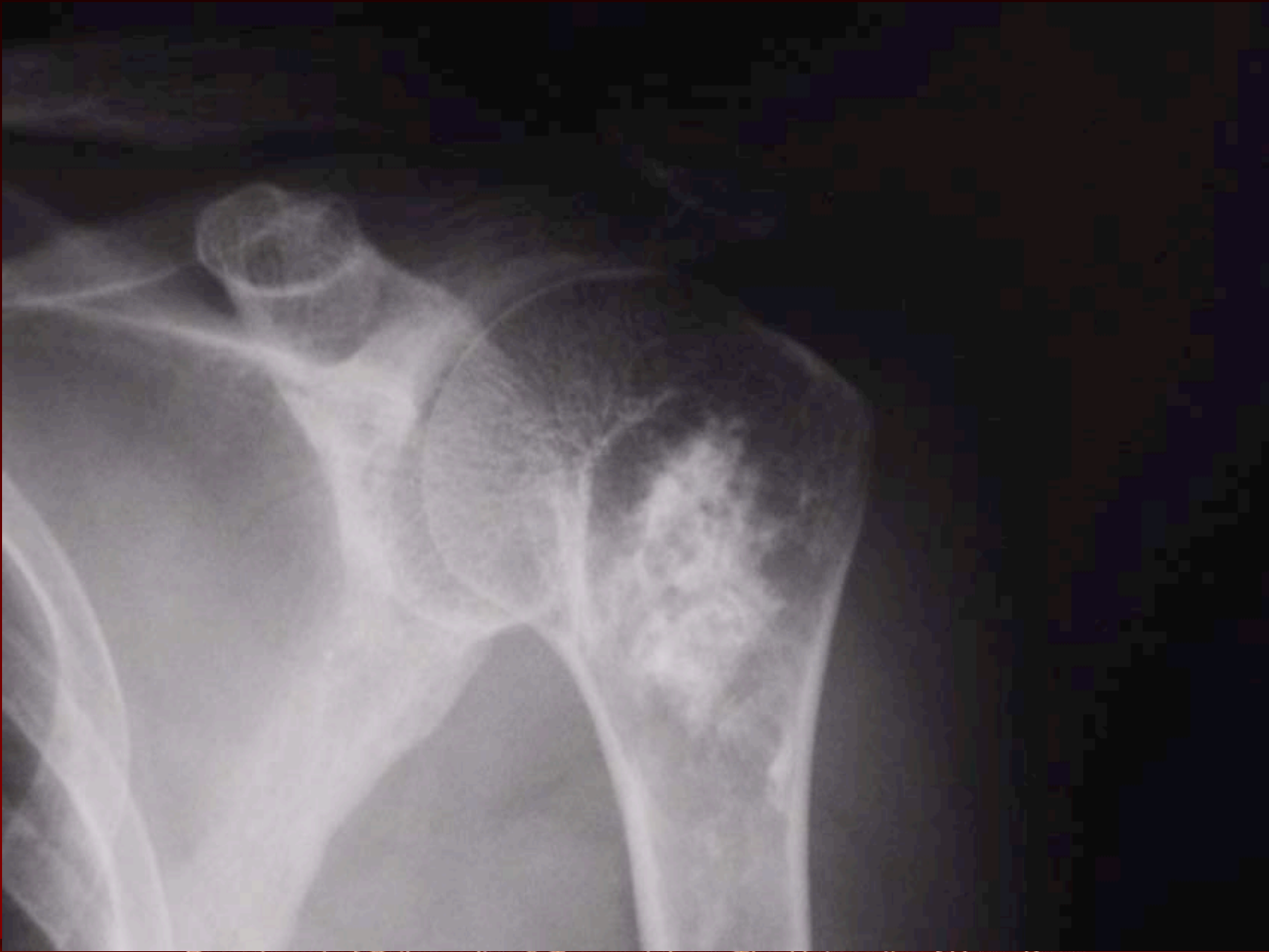




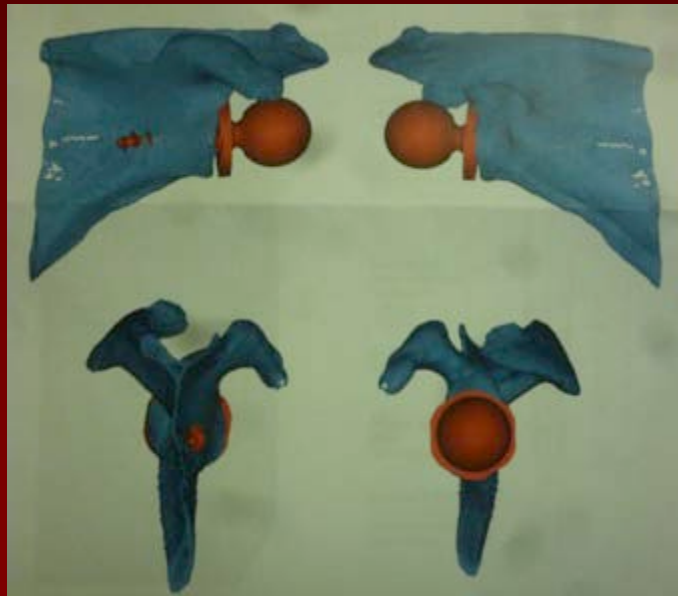


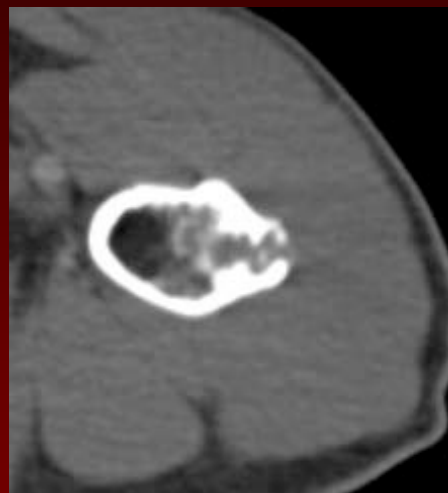
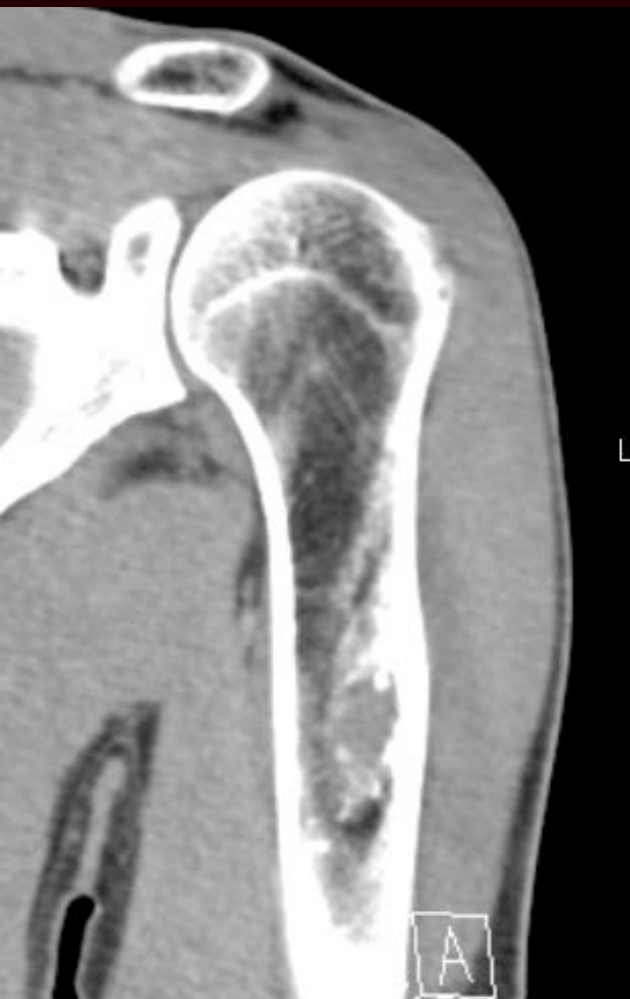


Osteosarcoma right humerus with pathological fracture





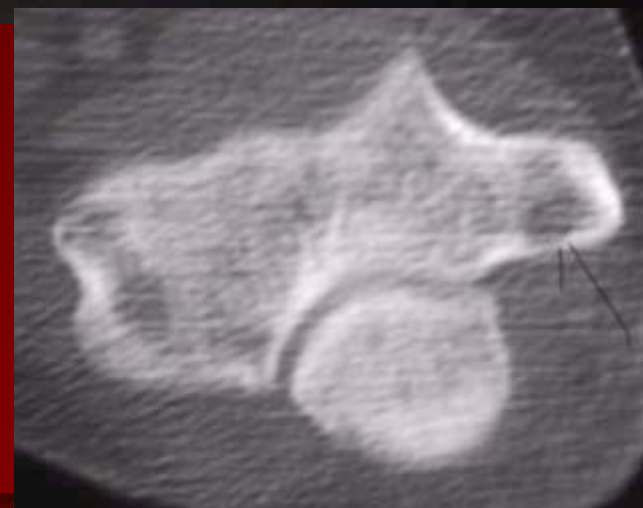
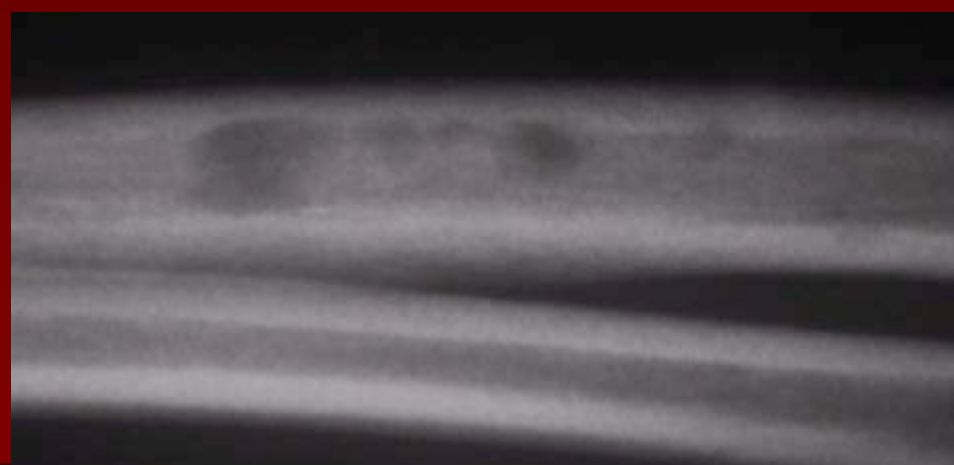




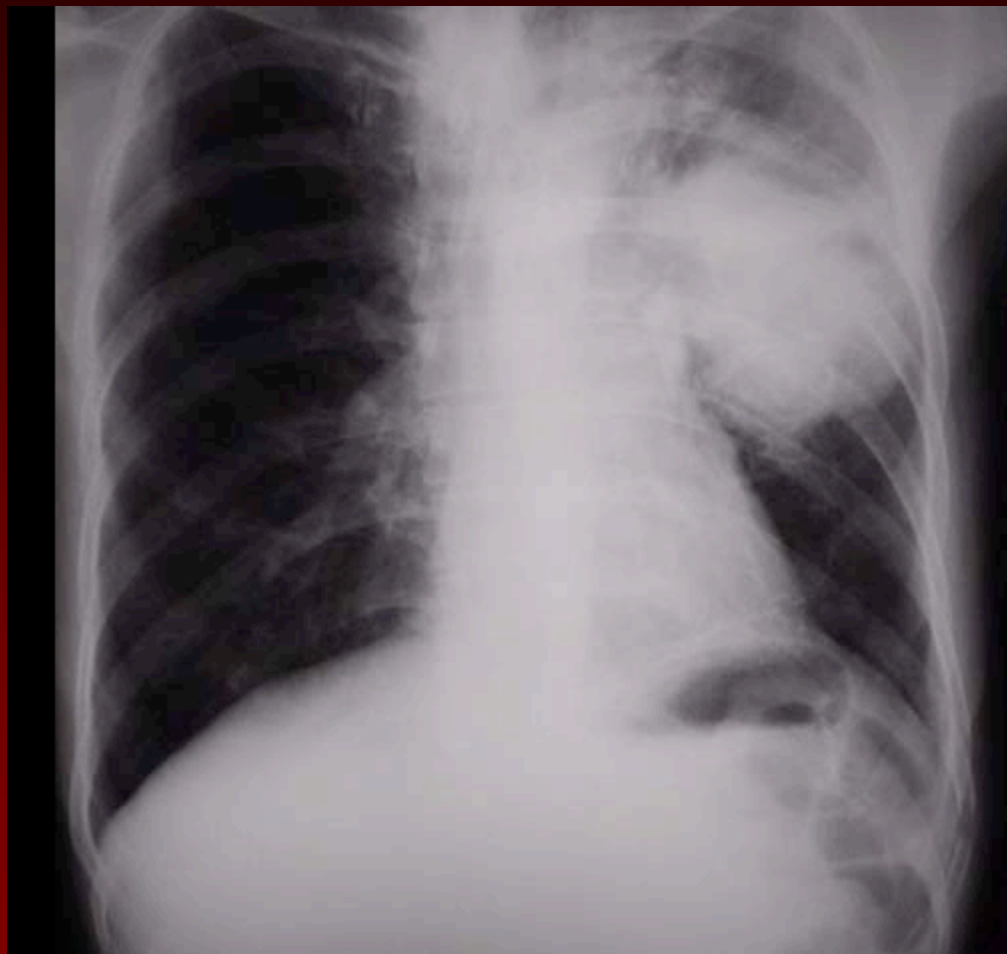
Reconstruction for Limb Sparing Resection

- **1. bone**
 - **Autograft: fibula graft**
 - **Allograft:**
- **2. Metallic**
 - **Custom made**
 - **Modular**
- **3. Allograft – Prosthesis Composite**





M/70 with recent wrist pain



Bone Secondary



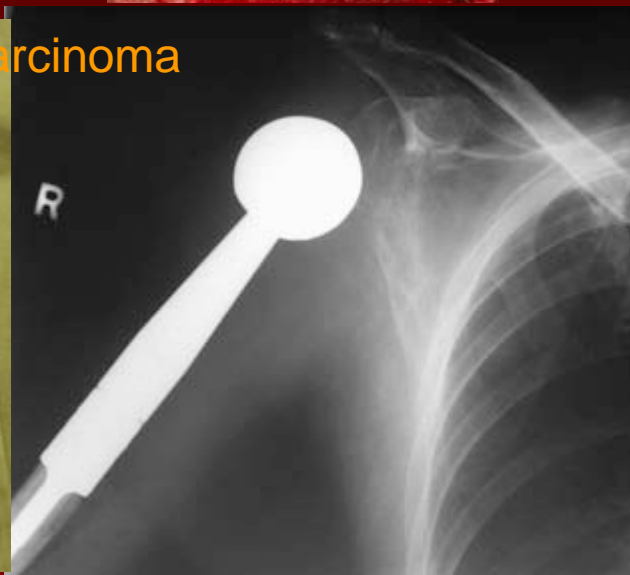
Treatment Option

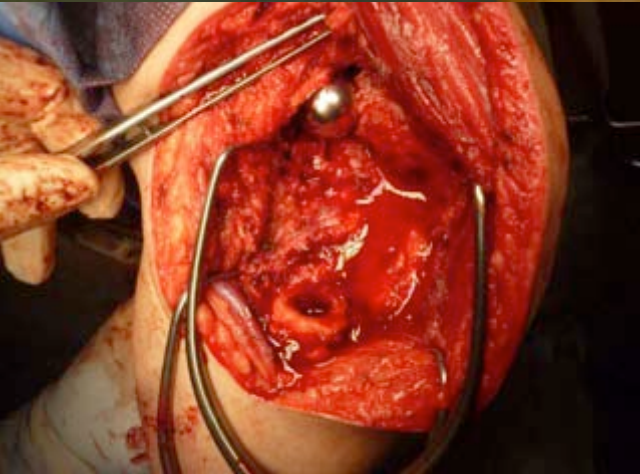
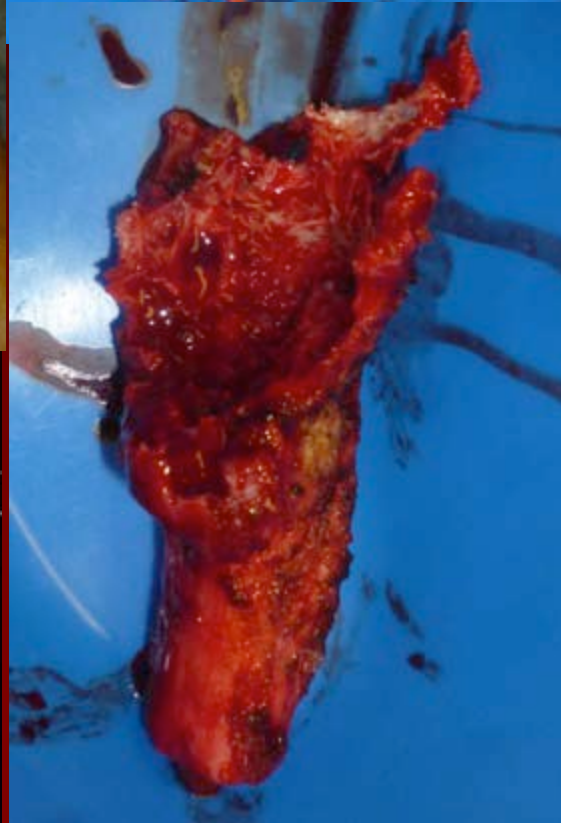
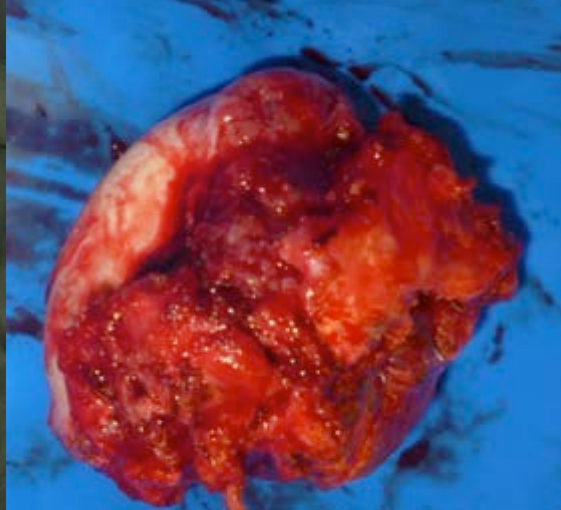
- **Conservative with / without external support**
- **Curettage + cementation (+/- fixation)**
- **Intramedullary Fixation**
- **prosthetic replacement**
- **Resection of lesion + Megaprosthesis**
- **Excisional arthroplasty / Amputation**





Solitary secondary of renal cell carcinoma









Take Home Message

- **Different lesions may look similar**
- **DDx and Mx not much different from other part of body (oncological view)**
- **Functional loss (hand surgeon's view)**



THANK YOU

