Tumours in the Hand

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Tumours in the *Hand*?

References: 380!

Case reports: > 200!

*Lister “The Hand - Diagnosis & Indications” 1993*
Objectives

- Introduction
- Classification
- Assessment
  - Clinical / Imaging / Lab studies / Biopsy
- Presentation & Management of the most common hand tumours
- Summary
Introduction

- The entire range of musculoskeletal tumours may occur in the hand.
- More dramatic presentation and interference with function.
- Multiplicity / rarity.

=> Disciplined approach.

*Dee / Hirst “Principles of Orthopaedics“ 1996*
Introduction

95%

- Ganglion
- Giant cell tumour of tendon sheath
- Epidermoid Inclusion cyst
- Haemangioma
- Lipoma

5%

- a variety of uncommon lesions arising from any of the following tissues

Butler, Am J Surg 1960
Classification

Swellings may arise from

- Bone & Cartilage
- Muscle
- Nerve
- Skin
- Subcutaneous tissue
- Synovium & Tendons
- Vessels

Lister 1993
Classification

1. Benign Tumours

2. Tumorous Conditions

3. Malignant Tumours

Assessment - History

- Age
- Duration / Onset
- Pain / neurological effects
- Variation in size
- Recurrent / multiple
- Concurrent symptoms
Assessment - Examination

Site
Size
Shape
Colour
Consistency
Mobility
Nodes
.........and the *rest* !
Assessment - Imaging

- X ray
- Isotope scan
- CT - Muren, Acta Radiol 1994
- MRI - Miller, Skeletal Radiol 1994
- Angiography
- Ultrasound - Hoglund, Acta Radiol 1997

- CXR / CT chest!
Assessment - Imaging

- X Ray
  - anatomical location
  - architecture
  - host reaction
  - internal contents

- MRI
  - unclear on plain film
  - Soft tissue component
  - accurate assessment of total extent pre-op
Laboratory Studies

- FBC / DIFF*
- ESR *
- Ca, Phosphate
- Alkaline Phosphatase
- Serum Protein
- Myeloma screen
- LFTs
- TFTs
Assessment - Biopsy

Plan & discuss with radiologists / oncologists after complete evaluation of patient

- longitudinal, no violation of fascial planes
- no drains, meticulous haemostasis, compression
- frozen section
- histology
- culture

usually: Complete Excision!

Mankin, Hand Clin 1987
Assessment - Staging

Surgeon + Radiologist + Oncologist

- **G** benign - 0
  - low - 1
  - high - 2
- **T** intracompartmental - 1
  - extracompartmental - 2
- **M** no - 0
  - yes - 1  

Enneking, Musculoskeletal Surgery 1983
Benign Tumours
Enchondroma

- Most common bony tumour in the hand / phalanges
- 3/4 decade
- Expansile, destructive
- Curettage +/- BG

Sekiya J Hand Surg 1997
Machens Unfallchirurg 1997

- Excellent prognosis if monostotic
Osteochondroma

- Juxtaepiphyseal protrusion capped by cartilage, continuous cortex, stalk
- Male, adolescence
- Asymptomatic unless impinging or deforming
- Excision if symptomatic / sudden rapid growth
- (-11%)
- ? Osteotomy of mature bone

Giant Cell Tumour of Bone

- Epiphyseal location, 3/4 decade, pain, swelling
- Central radiolucency, cortical erosion
- CT / MRI and bone scan
- Repeated treatments
- Aggressive (III) -> complete resection
- Recurrence ~ 70%

Dahlin, Hand Clinic 1987
Osteoid Osteoma

- prox phalanx / carpus
- 2/3 decade
- night pain - NSAIDS
- eccentric cortical sclerosis +/- nidus
- bone scan / CT
- curettage / II / CT
- 13% recurrence

Bednar, Hand Clin 1995
Chondroblastoma

- Humerus, but also: hamate
- 2 decade
- Eccentric, lytic, intact cortex
- Locally aggressive
- Curettage / BG -> resolution
- Complete excision of carpal bones

Vickers, RH et al., J Hand Surg, 1993
Neurofibroma

- Schwann cell tumour, intimately involved with fascicles
- Cortical sclerosis, US vs MRI
- Identification essential but removal only if symptomatic
- In digital nerves: ? excision  
  
  Basheer, J Hand Surg 1997

- If multiple peripheral nerves involved -> 10% malignant change
Lipoma

- 20% hand + wrist thenar eminence
- 3/6 decade, f>m
- DD ganglion
- cause nerve / tendon compression Babins JBJS ‘94
- Bufolini sign
- CT (deep seated) Muren, Acta Radiol 1994
- excision, excellent prognosis
Giant cell tumour of Tendon sheath

aka: localised pvnts, benign fibrous histiocytoma, xanthoma/fibroma

- benign histiocytic proliferation of articular or peritendinous synovium
- 4/6 decade
- painless rubbery nodule on index/middle
- x ray changes by pressure? FNA
- incomplete excision -> recurrence (10%)

Moore, J Hand Surg 1984
Glomus Tumour

- 1-5% of hand tumours
- 3/5 decade
- Subungual: Triad
- Ice pack test, Love’s pin test (Love, Mayo Clin Proc 1944)
- X-ray, MRI (Jablonski, J Hand Surg 1990)
- Excision -> complete relief
Haemangioma

- Cavernous
- tender enlargement of digit
- soft collapsible mass
- excision = curative

- if congenital: often conservative
Tumorous Conditions
CMC Boss

- Bony mass dorsal base 2/3 metacarpal
- Associated and confused with: ganglion, tenosynovitis
- Pain on dorsiflexion of wrist
- Symptomatic: excision+
- May involve ext. carpi rad brevis

Artz, JBJS - A 1972
Turret Exostosis

- Traumatic sub-periostal haemorrhage on dorsum of phalanx
- May limit flexion distally
- Excision of extra cortical-mature bone

Wissinger, JBJS - A 1966
Dejerine-*Sottas*-Disease

- Localised hypertrophic neuropathy
- Tender mass
- Median nerve -> CTD
- Requires nerve resection in severe cases
- Ass with macrodactyly

Mc Carroll, JBJS - A 1956
Epidermoid Inclusion Cyst

- Epithelioid tissue implantation, palmar fingertip
- Hx of penetrating trauma
- X ray: cystic lesion
- Enucleation is curative

Zadek, Am J Surg 1953
Vascular Tumours - Aneurysm

- **false** - penetrating trauma
- **true** - blunt trauma
- ulnar artery
- painful ?pulsatile swelling with hx
- compression symptoms
- excision +/- vein graft

*Kleinert, Arch Surg 1973*
Vascular Tumours- AV Fistula

- Acquired / congenital
- Pulsatile warm swelling, bruit, thrill
- Steal phenomenon
- HO CF+/- Branham
- Angiography
- Ligation/reconstruction only in acquired

Green, Operative Hand Surgery 1993
Ganglions, Mucous cysts & Volar retinacular cysts

Special topic 9/10/98
Malignant Tumours
Osteosarcoma

- 1/2 decade: primary, 5/6 decade: secondary
- Night pain, rapid progression
- "typical" X-ray signs, bone scan + CT/MRI
- Open biopsy
- Radical resection + Chemotherapy

Fleegler, Hand 1980
Chondrosarcoma

- most common primary malignant bone tumour
- 7/8 decade, pain
- ? previous enchondroma - DD
- late cortical destruction
- ray resection/amputation = successful

Dahlin, Cancer 1974
Epithelioid Sarcoma

- most common adult Sarcoma
- 2/3 decade, male
- DD Infection, “benign appearance” but highly malignant
- wide excision of ‘untouched’ lesions = curative
- Children: **Rhabdomyosarcoma**

*Bryan*, *Clin Orth 1974*
Squamous Cell Carcinoma

- most common primary malignancy in the hand
- variable clinical picture
- nodes!
- excision 1cm margin and lymphadenectomy
- MM!
Secondary Malignancies

- Metastasis is rare, terminal phalanx
- seek primary - **lung**
- X ray : osteolysis
- DD infection, gout etc
- general condition dictates treatment but ominous outlook

*Castello, J Hand Surg 1996*
Management - Excision of Malignancies

Goal: 1. tumour control

2. functional limb

- all suspected malignancies need excisional biopsy
- ablation with tumour free margin
- functional reconstruction later
- adjuvant therapy

Smith, J Hand Surg 1977
Management - Principles of Tumour Excision

- intralesional - 100%
- marginal - 25 - 50%
- wide < 10%
- radical

Miller, Review of Orthopaedics, 1996
Management - Surgical planning

- skin coverage
- no Esmarch bandage
- defer reconstruction until definite tumour free margin

- Experienced Hand Surgeon with interest in Oncology
Summary: Mankin’s Axioms

- 95% are benign and easily recognised / treated
- Primary bone tumours are usually benign. Most common: Enchondroma
- Deep soft tissue tumours are often malignant except: Lipoma
- Epithelioid Sarcoma is relatively common in the hand and highly malignant.
- Metastatic tumours are rarely seen.
Summary-”Andrea’s Axioms”

- History / Clinical Ex.
- X ray & MRI
- ask someone with interest and experience for advise before cutting
Thank You
Calcinosis

- Obscure cause? Trauma / degeneration
- DD infection
- X ray: deposits near FCU, collateral lig., rarely multiple
- Supportive treatment unless very large
- *Calcinosis circumscripta* : assoc. with “Collagenoses”,

*Milford in Campbell’s Op. Orthopaedics, 1987*