Lumps & Bumps...
Presentation Focus

- The role of ultrasound
- Ultrasound appearances of:
  - Typically benign lesions
  - Typically benign MSK related lesions
  - Equivocal/likely benign lesions
  - Equivocal lesions
  - Suspicious lesions
    - Case studies
The issue

- 3/1000 people have a ‘lump or bump’
- 99% of which are benign
- Defensive Medicine:
  - Increasing number of ultrasound referrals, where previously clinical diagnosis would suffice
No single radiological investigation can reliably distinguish a benign soft tissue lesion from a malignant lesion.
Red Flag Signs

- Increasing in size (best individual indicator)
- Painful
- >5cm
  - Deep mass: increased likelihood of malignancy
NICE & The British Sarcoma Group:

- If ultrasound raises the suspicion of a sarcoma the patient should be referred for further investigation;
  - Adults - 2WW cancer pathway
  - Children and young adults - an appointment within 48 hours
• NICE & The British Sarcoma Group:
  • If ultrasound findings are uncertain & clinical concern persists consider referral for further investigation;
    • Adults - 2WW cancer pathway
    • Children and young adults - an appointment within 48 hours
NICE & The British Sarcoma Group:

- Any lesions previously thought to be benign that increases in size or develops other suspicious features should be considered for further investigation.
The Role of Ultrasound

- Triage lesions into categories:
  - Benign
  - Equivocal
  - Suspicious
1. Clinical history & clinical assessment

2. Location:
   - Subcutaneous/Intra muscular/Arising from nerves or vessels/Attached to tendon sheath or joint

3. Grey scale appearances:
   - Homogeneous/Heterogeneous/Calcification/Solid or cystic
4. Margins
   - Smooth/Irregular/Poorly or well defined/Does it cross boundaries

5. Vascularity
   - Not always a useful predictor of malignancy

6. Dynamic assessment
   - Compressibility
Ultrasound Reports

- **Diagnosis** (when imaging features are classic)
- **Lesion description:**
  - Content - cystic or solid / Size / Location / Vascularity
- **Lesion borders:**
  - Well circumscribed/ Infiltrative
- **Management advice**
- **Vessels in close proximity** (for excision purposes)

*Should this mass increase in size or become painful, we would be happy to re-assess this lesion*
Typically Benign Lesions...
Typical Lipoma/Lipomata
Epidermal Cyst (with punctum)
Foreign Body

Acute

2 Years Later
Varicosity
Varicosity
Hernias
Abscess
MSK Related Benign Lesions...
Beware of synovial sarcomas – clinical history is key!!
Bursitis
Tenosynovitis
Tendinopathy

Bone/Joint Pathologies

Dislocation

Fracture

Synovial hypertrophy arising from the radiocarpal/carpal joints

Active synovitis on Doppler
Plantar/Palmar fibroma
Asymmetrical muscle (fat) distribution

Anomalous/accessory muscles
Equivocal/Likely Benign Lesions...
Giant Cell Tumours
Implantation Dermoid

https://radiopaedia.org/images/2363255
Suture Granuloma

https://radiopaedia.org/articles/suture-granuloma
Fat Necrosis/Oil Cyst


Equivocal Lesions
Haemangioma/AVM
Peripheral Nerve Sheath Tumours
Intramuscular Lipoma
Suspicious Lesions

- Complex features:
  - Margins – infiltrative
  - Branching internal vascularity
  - Breaching fascial planes
  - Increasing in size
  - > 5cm
  - Internal calcifications
  - Scalloped outline
  - Deep lesion
  - Does the history fit ultrasound findings? If not be cautious!!!
Cases...
Case 1
Case 3
Haematoma

Acute Haematoma

Chronic Haematoma

https://radiologykey.com/muscles/
Case 4
Case 5
Case 6
Case 7
Summary...

- Ultrasound **cannot** reliably predict histology
- Role of US is to triage lesions:
  - **Benign** – classic ultrasound & clinical history
  - **Equivocal** – open to more than one interpretation, further investigation should be considered
  - **Suspicious** – infiltrating, solid, involving bone, relevant history
Questions?
Bibliography

Bibliography


- **NICE (2015)** *Suspected cancer: recognition and referral NICE Guidance NG12 June 2015, Section 1.11.* Available at: http://www.nice.org.uk/guidance/ng12
  Accessed: 12/09/17
Bibliography


Soft Tissue Sarcomas

- UK 2010: 3,272 new cases
- Unusual as a large proportion occurs in children & young adults;
  - 9% diagnosed <30s
  - 43% in >65s
- Management: surgical excision, +/- radiotherapy
- Survival rate: 55% at 5 years
Anatomical: Distribution of Cases Diagnosed: UK, 2008-2010