Lumps & Bumps
--When to be concerned--

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Disclosure

I have nothing to disclose and have no potential conflict of interest with any company or service industry

Objectives

- Identify the "red flags" of musculoskeletal lesions
- Case examples of tumors that may emulate sports pathology
- Understand the basics of musculoskeletal oncologic staging
- Provide an introduction to the pitfalls of poorly planned and performed biopsies
- Know when to refer a patient with musculoskeletal lesions
Musculoskeletal Oncology

- Division of orthopaedics focusing on surgical treatment of soft-tissue and bone tumors (and simulators)
- Requires multi-disciplinary approach
- Often extensive radiologic imaging
- Staging / Carefully planned biopsies
- Vast array of surgical intervention and reconstruction

Case #1

- 30 year old male
- Chief complaint: Mass in left thigh
- HPI: Healthy male with slowly enlarging mass in anterior thigh over 6 months. Causing minimal to mild discomfort.
- ROS: negative
- X-RAYS: negative
Case #1

In contrast to…

- 59 year old male noticed a mass in the right proximal thigh ~ 6 months ago
- Has remained the same size
- Denies any pain or trauma
- Notices it more with contraction of the quadriceps (proximal 1/3rd of anterior thigh)
- No significant PMHx or PSHx

Not all masses are Tumors…

65 y.o. male with anterior thigh mass for 5 years... slowly increasing in size with occasional discomfort
Case #2

10 y.o. female
- Chief complaint: Left knee pain
- Healthy with no PMHx
- Was sailing and struck Left leg against the boat during turbulence
- Had pain but able to walk
- **Pain persisted** despite conservative management for the next 4-6 weeks
Case #2

- Open biopsy confirms osteosarcoma
- Proceeded with Neoadjuvant chemotherapy
  - Doxorubicin, Cisplatin, and Methotrexate
  - Current gold standard of treatment
  - Radiation has little to no role
- Surgery: Knee disarticulation with epiphysiodesis of the distal femoral growth plates
- Adjuvant Chemotherapy

Case #3

- Healthy 10 year old with LEFT hip pain for nearly 6 months
- Avid soccer player
- Does not recall an injury
- Pain with activity but mostly at night
- NSAIDs completely relieve the pain but returns as soon as the meds wear off
Radiolucent Nidus – pathognomonic of an Osteoid Osteoma

Conservative management with daily NSAIDs
- Although osteoid osteomas are self limiting they often persist on average 3-5 years before “burning out”
- Prolonged use of NSAIDs – ulcers*, kidney damage, etc.

Surgery
- Radiofrequency ablation
- Open excision
- Other modalities (?)
Case #4

37 y.o. female
- Chief complaint: Shoulder pain w/ mass and swelling
- 30 weeks pregnant
- Symptoms present for nearly 7 months
- Otherwise healthy
- Went to see sports doc
Case #4

Large soft-tissue mass surrounding scapula

Case #4

- Agreed to x-ray
- Days before had outside open biopsy done (2.5" oblique incision)
- Urgent percutaneous biopsy done in my office
- Consistent with high-grade osteosarcoma (poorly differentiated)

Case #4

Soft-tissue mass with little bony change

Case #4

Urgent c-section at 31 weeks

Pre-operative clinical photos
Case #4

Post-operative follow-up x-rays

Red Flags

- New or old mass with rapid growth
- Within weeks or months is a concern
- Night Pain
- Persistent pain
- Radicular symptoms
- Signs of mass effect – bowel / bladder issues, DVT, swelling, ...
- Systemic symptoms

Case #5

- 42 year old woman with vague pain in right flank with small mass
- CT showed 3-4 cm mass
- Felt to be benign or a hematoma
- Schizo-affective disorder, poor family / social situation
- Non-compliance issues
Case #6

- 15 year old female
- High school student and volleyball player
- Long history of bilateral patello-femoral symptoms
- Otherwise healthy
- X-ray showed abnormality and sent for evaluation
Case #6

1. Open biopsy of femur
2. Extensive curettage, high-speed burring, allograft
3. Prophylactic fixation

Case #7

- 64 year old male s/p right THA 2 1/2 years ago for OA
- No history of cancer
- Fairly healthy and active
- New onset of severe right hip pain
Musculoskeletal Oncology

**Initial evaluation:**
- Comprehensive H&P
- Mass
- Pain
- Fever
- Systemic symptoms: weight loss, appetite decreased, N/V/D, etc.
- Incidental finding – traumatic event
  - Pathologic fracture
Musculoskeletal Oncology

Radiologic Work-up:
- Plain X-Ray
- CT scan area of interest
- CT chest / abdomen / pelvis
- MRI
- Bone Scan
- PET Scan

Staging
- Pre-operative planning if necessary

Last Words
- Listen to patients
  - History is critical when you can get it
- Recognize "Red Flags"
  - If it doesn't seem normal, it probably isn't
  - Rapid growth, night pain, etc.
- An injury doesn't mean there can't be another pre-existing or underlying problem
- Staging helps provide diagnostic information and guides treatment
- A biopsy is a critical first step in management with potential implications

References
Thank You