Musculoskeletal Tumour Mimics

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**Vascular**

- Giant Bone Island
  - These are bone islands greater than 2cm in diameter. They are found in the medullary cavity. Demonstrate a spiculated margin and blend in with the surrounding trabeculae. No associated soft tissue mass, bone destruction, or periosteal reaction is seen. Low signal on all MRI sequences like normal cortical bone.

**Inflammation**

- Morel-Lavallee
  - Occurs in the setting of trauma and is a closed degloving injury from a shearing force separating skin and subcutaneous fat from the fascia. On ultrasound will be anechoic or hypoechoic and may contain debris, fluid levels or hyperechoic globules. MRI will demonstrate the injury and its relationship with the fascia. Fluid levels and globules of fat may be also demonstrated, as seen in this case.

**Trauma**

- Odontoid Pannus
  - Fibrovascular granulation tissue due to excessive inflammatory proliferation that is frequently seen in Rheumatoid Arthritis. In advanced disease it can occur in the cervical spine and cause erosion of the odontoid process. Usually intermediate signal on T1, low on T2 with variable STIR and post contrast appearance depends on the degree of active inflammation.

**Auto-immune**

- Chronic Sclerosing Osteomyelitis of Garre
  - Chronic low activity infection causes ossifying periostitis with subperiosteal bone formation as demonstrated on the plain film. In addition the MRI will demonstrate increased STIR and variable contrast enhancement can be present if there is ongoing low-grade activity. Defects can be seen in the thinned bone in keeping with cloaca where necrotic/infected material drains through.

**Metabolic**

- Myositis Ossificans
  - Post traumatic lesion with muscles that on plain films can be seen on peripherally calcified lobulated lesions with a cleft between the lesion and the underlying bone often demonstrated. Soft characteristics on MRI will often follow that of bone.

**Iatrogenic**

- ALVAL
  - Aseptic lymphocyte-dominant vasculitis associated lesion (metal-on-metal pseudotumour). On MRI well defined masses with mixed solid and cystic component can often be seen. Typically a low intensity rim is evident as in this case.

**Neoplasm**

- Intramuscular Haemangioma
  - On ultrasound a well defined mass with hypoechoic areas and vascular flow is seen and sometimes hyperechoic areas in keeping with. Similar features are demonstrated on MRI with high T2 signal, intermediate T1 with local fatty areas of increased signal and patchy contrast enhancement.

**Degenerative**

- collapsing deformity
  - The great mimicker can have a wide range of presentation. This case presented with persistent hypercalcemia. A PET performed due to suspicion of malignancy demonstrated numerous foci of increased activity in the muscles of the thigh and upper arm. A biopsy confirmed granulomatous disease.