Interesting (MSK) Cases Meeting
07.03.2019

Dr Ajay Varghese MRCP FRCR
Visiting Radiologist
Prince of Wales Hospital
Case 1
60 male, failure of shoulder abduction for two weeks, pain in neck and left shoulder.
Differential Diagnosis

• Malignancy - metastasis from visceral malignancies, infiltrates from hematological malignancies
• Atypical for infection
• History of Refractory AML on supportive treatment
Myeloid sarcoma otherwise called granulocytic sarcoma or chloroma

**Granulocytic Sarcoma of the Spine: MRI and Clinical Review**
Jee Hyun Seok, Jeongmi Park, Sun Ki Kim, Jung Eun Choi, and Choon-Choo Kim
*American Journal of Roentgenology* 2010 194:2, 485-489

Singh A, Kumar P, Chandrashekhara SH, Kumar A.
Myeloid sarcoma

- Myeloid sarcoma (also called granulocytic sarcoma, chloroma and extramedullary myeloid tumor) is a rare neoplasm comprised of myeloid precursor cells.
- It can occur in association with AML, CML, other myeloproliferative disorders
- Localized tumor formed by primitive myeloid cells at an extramedullary site.
- Transgression of myeloid cells through the haversian canal
- Myeloid sarcoma may develop during the course of a hematologic disorder, but is seen to precede the disorder in 35% of cases.
- Almost any tissue can be affected, with skin and bone being the commonest.
Case 2 - 59 male, back pain
Synovial cysts of the spine
Connected to the facet joint, synovial fluid lined by a cuboid or pseudostratified columnar epithelium - typically associated with adjacent facet joint arthropathy.

Clinical presentation: Asymptomatic and found incidentally. Stenosis of the spinal canal and compressive symptoms. Cause of peripherally enhancing masses in the extrathecal space anywhere along the spinal canal.

CT: calcified cystic lesion adjacent to a facet joint. CT may also show adjacent facet joint arthropathy +/- the presence of gas.

MRI: Calcification - low signal intensity on both T1 and T2 weighted images hemorrhagic cysts display increased intensity compared to CSF. The cysts do not always possess the signal characteristics of a simple cyst, so contrast administration may be needed in some cases.

Differential diagnosis: ganglion cyst, neural based cysts

Treatment: Cysts can be operated upon or accessed percutaneously.
Case 3 - 66 male with swelling at Achilles tendon insertion, unable to walk
Ultrasound can demonstrate urate deposition, tophus, and vascularization that are present throughout the Achilles tendon in patients with tophaceous gout.

References
(a) Intratendinous urate deposits appear as hyperechoic bands (arrows) on collagen fibrils in the mid-portion of the Achilles tendon. (b) Intratendinous tophus deposition to the proximal zone of the Achilles tendon (arrows). (c) Intratendinous vascularization to the mid-portion of the Achilles tendon (arrows).
1. Tophus deposition was observed in 73% (n = 35) of tendons in those with gout and in none of the controls (p < 0.01).
2. Intratendinous hyperechoic spots (p < 0.01) and intratendinous power Doppler signal (p < 0.01) were more frequent in participants with gout compared to controls.
3. Hyperechoic spots were significantly more common at the insertion compared to the zone proximal to the mid-section (p < 0.01), but between-zone differences were not observed for other features.
4. High prevalence of enthesal calcifications, calcaneal bone cortex irregularities, and calcaneal enthesophytes were observed in both gout participants and controls, without differences between groups.
5. Intratendinous structural damage was rare in tophaceous gout.
Case 4 - 65 male, Diabetic, History of multiple skin lesions for many months, focal lesions in medial thigh for a year, now ulcerating, history of splenectomy age 5 for easy bruising – hematological disorder
Differential diagnosis

• Necrobiosis lipoidica diabeticorum – DM, RA, can also develop in people with good diabetic control, PUVA therapy

• Morphea – localized scleoderma, ulceration is rare.

• Chronic low grade infection
Histopathology - lymphoma
Lymphoid neoplasms

Hodgkin's

Non Hodgkin's

T cell

Precursor T cell

Peripheral T cell

Predominantly disseminated/leukemic disease
Primary extranodal disease
Predominantly nodal disease

B cell
Peripheral T-Cell Lymphoma: Spectrum of Imaging Findings with Clinical and Pathologic Features

- Hyun Ju Lee,
- Jung-Gi Im,
- Jin Mo Goo,
- Kyoung Won Kim,
- Byung Ihn Choi,
- Kee Hyun Chang,
- Joon Koo Han,
- Moon Hee Han

Published Online: Radiographics, Jan 1 2003 https://doi.org/10.1148/rg.231025018

PTCL is a cancer that arises in the lymphoid tissues outside of the bone marrow such as lymph nodes, spleen, gastrointestinal tract, and skin.
<table>
<thead>
<tr>
<th>Clinicopathologic Entity</th>
<th>Common Primary Involved Organs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extranodal NK/T-cell lymphoma, nasal type</td>
<td>Sinonasal cavity, upper airway</td>
</tr>
<tr>
<td>Enteropathy-type T-cell lymphoma</td>
<td>Small intestine, colon</td>
</tr>
<tr>
<td>Subcutaneous panniculitis-like T-cell lymphoma</td>
<td>Subcutaneous fat</td>
</tr>
<tr>
<td>Mycosis fungoides</td>
<td>Skin</td>
</tr>
<tr>
<td>Anaplastic large cell lymphoma, primary cutaneous type</td>
<td>Skin</td>
</tr>
<tr>
<td>Anaplastic large cell lymphoma, primary systemic type</td>
<td>Lymph nodes, liver, spleen, lung</td>
</tr>
<tr>
<td>Angioimmunoblastic T-cell lymphoma</td>
<td>Lymph nodes, liver, spleen, lung</td>
</tr>
<tr>
<td>Peripheral T-cell lymphoma, not otherwise specified</td>
<td>Lymph nodes, liver, spleen, lung</td>
</tr>
<tr>
<td>Hepatosplenic γδ T-cell lymphoma</td>
<td>Liver, spleen, bone marrow</td>
</tr>
</tbody>
</table>
Mycoses fungoides
Subcutaneous panniculitis type lymphoma
Anaplastic Large cell lymphoma
Latest classification of PTCL:

Four most common subtypes of PTCL:
Peripheral T-Cell Lymphoma, Not Otherwise Specified
Anaplastic Large Cell Lymphoma
Angioimmunoblastic T-Cell Lymphoma
Cutaneous T-Cell Lymphomas (mycosis fungoides and sezarys syndrome) — account for approximately 88 percent of all PTCL cases in the United States.

Rarer types:
Adult T-Cell Leukemia/Lymphoma (ATLL)
Enteropathy-Type T-Cell Lymphoma
Nasal NK/T-Cell Lymphoma
Hepatosplenic gamma delta T cell lymphoma
Case 5 - 56 male – recurrent synovial sarcoma lower limb
Ultrasound recommended to assess proximally and also to guide biopsy
Nerve metastasis on biopsy – rare diagnosis

Rare case reports of nerve root nodular metastasis from prostate, renal, cervical cancers.
Example case of nerve root metastasis from cervical carcinoma
Quick revision on Lumbosacral plexopathy: different entity to nodular nerve root metastatic disease

Common presentation: Type 2 diabetes patients with weight loss and (both anterior and posterior) thigh and buttock pain.

The second most numerous group with lumbar plexus plexopathy is of cancer patients described in gastrointestinal tumors (colon or rectal cancer), gynecological cancer, renal cancer, prostate cancer, and lymphoma.
- pressure on lumbosacral plexus (eg, ovarian cancer),
- proliferation through the plexus or perineural growth (which is characteristic of some tumors—eg, prostate cancer),
- postsurgical plexus lesion
- paraneoplastic syndrome
- radiation-induced plexopathy
Case 6 - 80 female – fell on outstretched hand – no obvious fracture identified.

- Twenty-one consecutive inpatients admitted following fracture of the distal radius underwent preoperative evaluation with both conventional radiographs and MRI.
- Osseous injury: Of 21 patients with fractures of the distal radius, 20 had extension to the radiocarpal articulation, 14 had distal radio-ulnar joint extension and 5 had avulsion of the ulnar styloid. Occult carpal bone fractures accompanying fracture of the distal radius were identified in two patients: one of the capitate and the other of the second metacarpal base.
- Non osseous injury: Ten patients (48%) had associated soft tissue injury: six patients had scapholunate ligament rupture, two patients had disruption of the triangular fibrocartilage, one patient had extensor carpi ulnaris tenosynovitis and one patient had a tear of a dorsal radiocarpal ligament. Of five patients with ulnar styloid avulsions, none had evidence of triangular fibrocartilage tears.
- MRI affords better evaluation of osseous injury accompanying distal radial fractures than conventional radiographs. Intra-articular soft tissue injury accompanies distal radial fractures in almost 50% of cases. Scapholunate ligament disruption commonly accompanies intraarticular fracture through the lunate facet of the distal radius. Fracture of the ulnar styloid is infrequently associated with tear of the triangular fibrocartilage.
- Learning point – Satisfaction of search
Thank You