

Gluteal Abscess

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2/28/2020

RAD 3030

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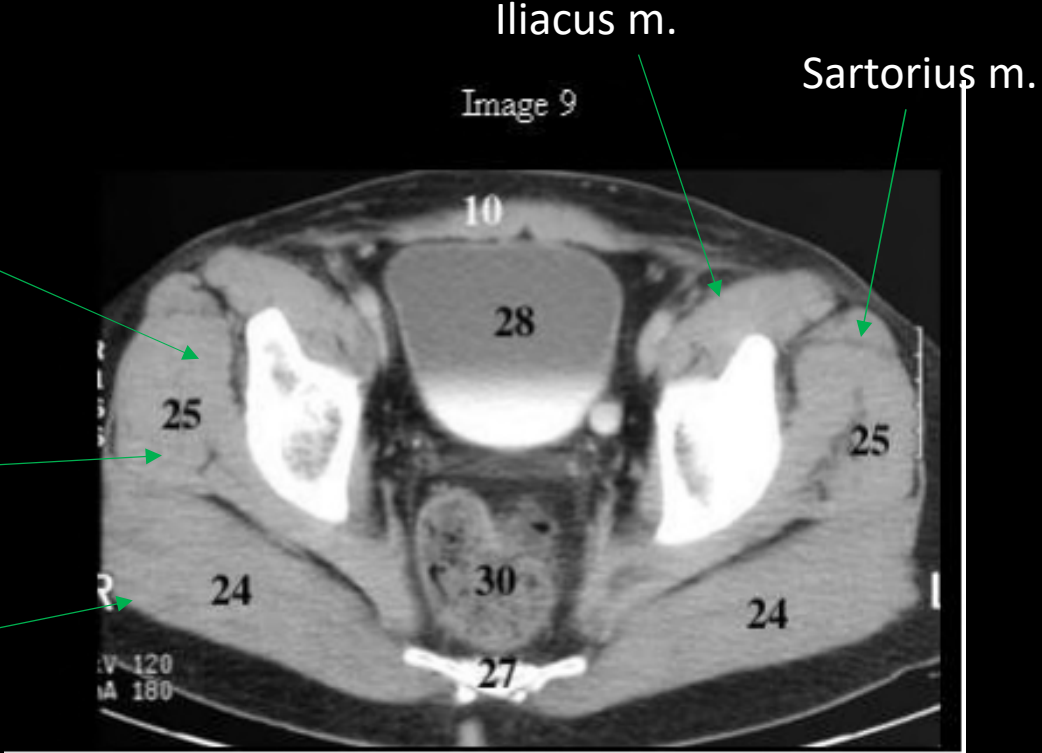
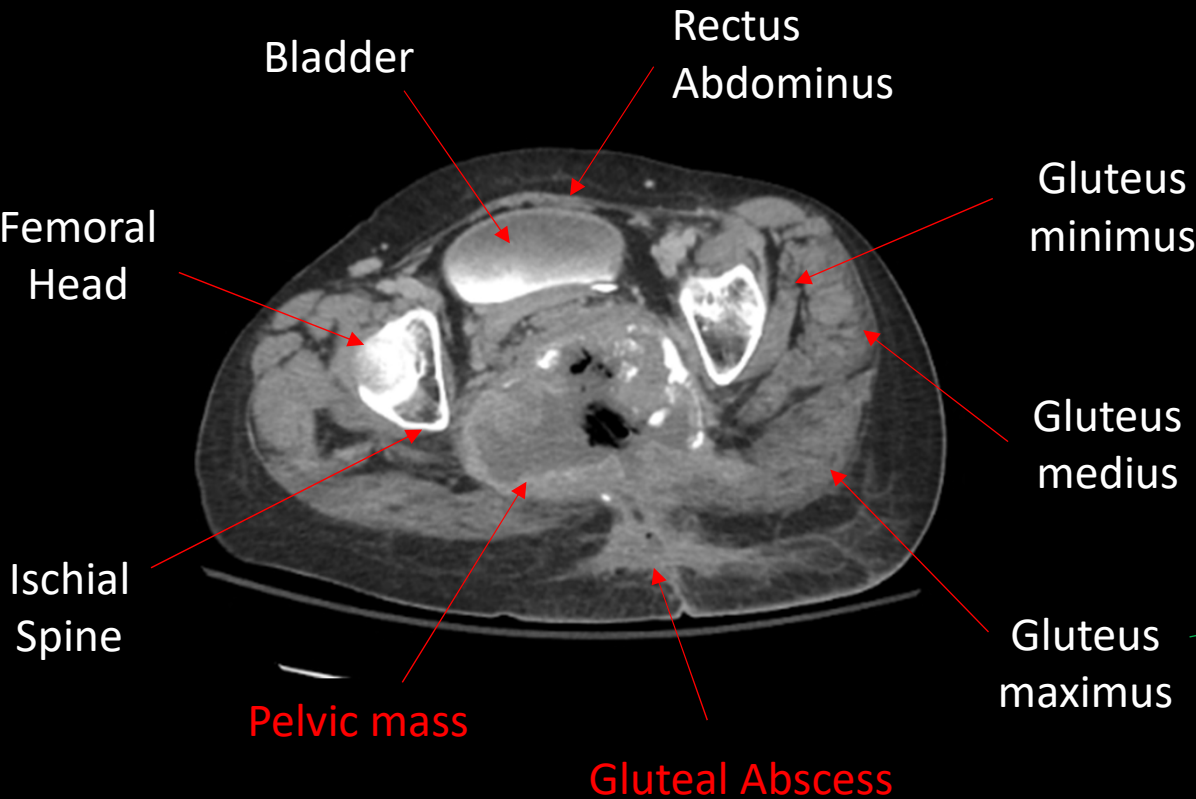
Initial H&P 2/13/20

- 24yo F with a PMH significant for Neurofibromatosis (NF) and a malignant sacral nerve sheath tumor dx in 2018
 - Most recent tumor resection on 1/30/20 at TMC MHH
- Presented to ED with fever, fatigue, N/V, abdominal pain and pain at surgical site in lower back
- Physical exam:
 - VS: febrile and tachycardic
 - Pertinent negatives included no swelling, erythema, or foul drainage around the wound site
 - Pertinent labs include elevated WBC and elevated procalcitonin
 - Relevant imaging ordered- CT Abdomen/pelvis
- Pt was admitted to the hospital on broad spectrum IV abx and pain control

Differential Diagnosis

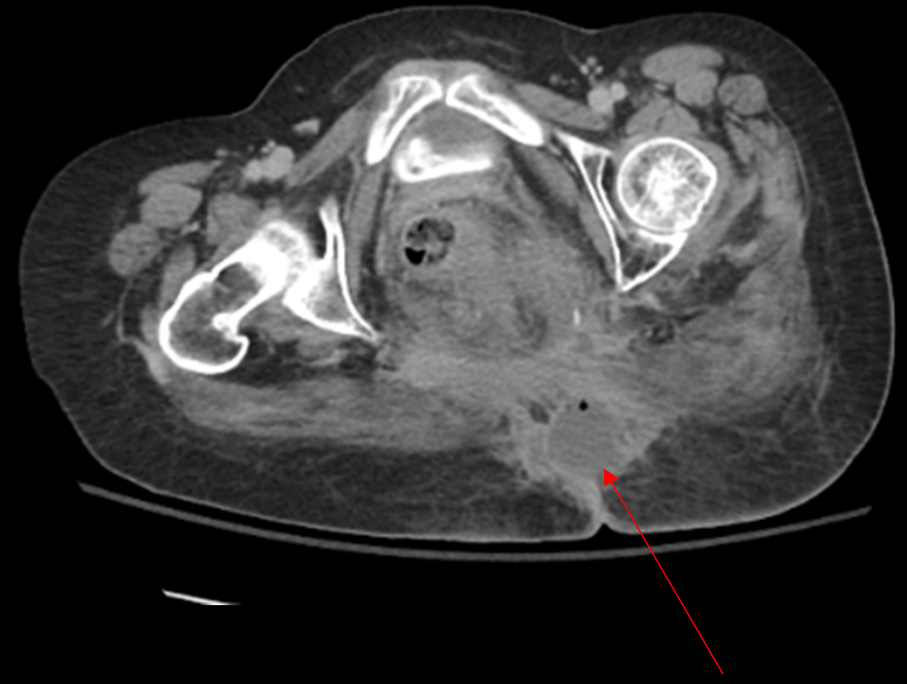
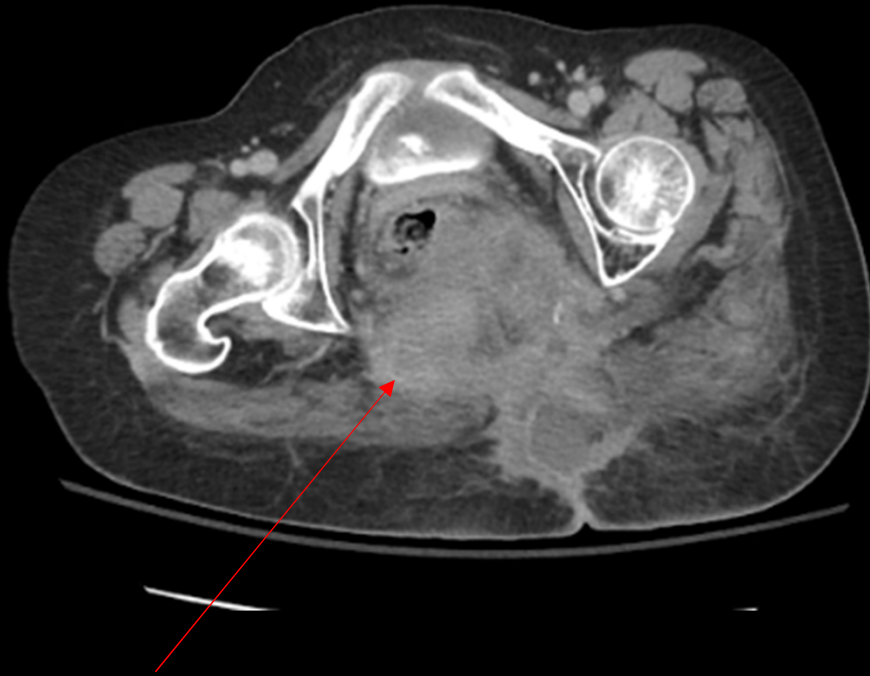
- Abscess
- Recurrence of tumor
- SSI
- UTI
- PNA

CT Abdomen/Pelvis (2/13/20)



<http://gamma.wustl.edu/docs/CT-transverse-anatomy.pdf>

CT Abdomen/Pelvis (2/13/20)



Key imaging findings

- Prior known mass in the surgical area of the sacrum and coccyx has an increase in size compared to previous reports
 - Enhancement along the periphery of the cavity which could either be residual tumor or possible infection
- New finding: Soft tissue fluid collection measuring 3.8 x 2.7 cm with enhancement of the rim in the L gluteal region
 - Consistent with an abscess

Discussion

- Based off pt's overall clinical history and imaging findings, pt's most likely dx is sepsis 2/2 gluteal abscess formation
- Pt's risk factors include recent surgery, PMH of NF and associated malignancy- chronically immunocompromised state.
- Percutaneous drainage is the preferred treatment method of choice for this pt
 - Localized fluid collection
 - No signs of peritonitis or worsening exam findings that would lead to surgical drainage
 - Faster recovery time and minimally invasive compared to surgical drainage

Abscess

- Confined collections of suppurative inflammatory material
- Usually made up of a central core of necrotic cells and local tissue
- Can be surrounded by a “capsule” with dilated vessels and fibroblasts
- Can be located in any tissue of the body
- Caused by bacteria, parasites or fungi
- Occur in the parenchyma of the affected organ vs Empyemas- form in a pre-existing cavity like the pleural space
- Treatment- generally require percutaneous or surgical drainage along with continued antibiotics

Radiographic features of Abscesses

- A central necrotic component
- A well-defined fibrous capsule- can be irregular and thick compared to the wall of a simple cyst
- Capsular ring enhancement but can be difficult to appreciate if contained in a vascular structure
- Surrounding inflammatory changes
- Mass effect with effacement of adjacent structures
- An indium labeled white cell scan can be used in the setting of a suspected abscess due to sepsis

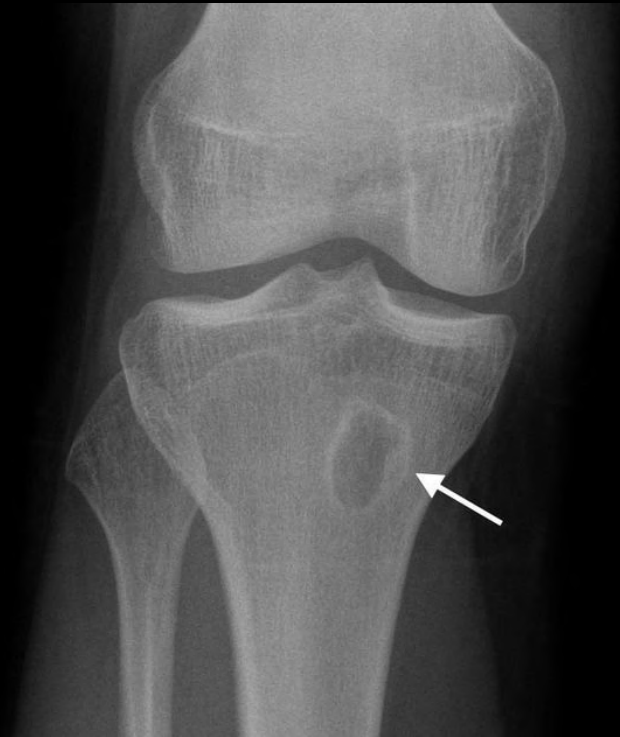
Few examples

27



W 89 : L 55

Cerebral Abscess

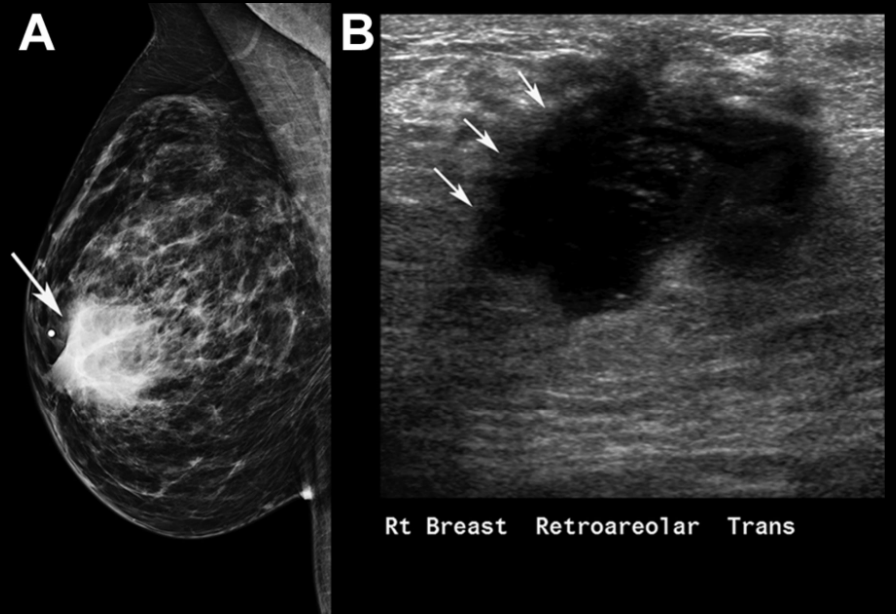


Brodie's Abscess

multiseptated, fluid-filled, rim-enhancing mass – consistent with tuboovarian abscess



Tubo-ovarian abscess

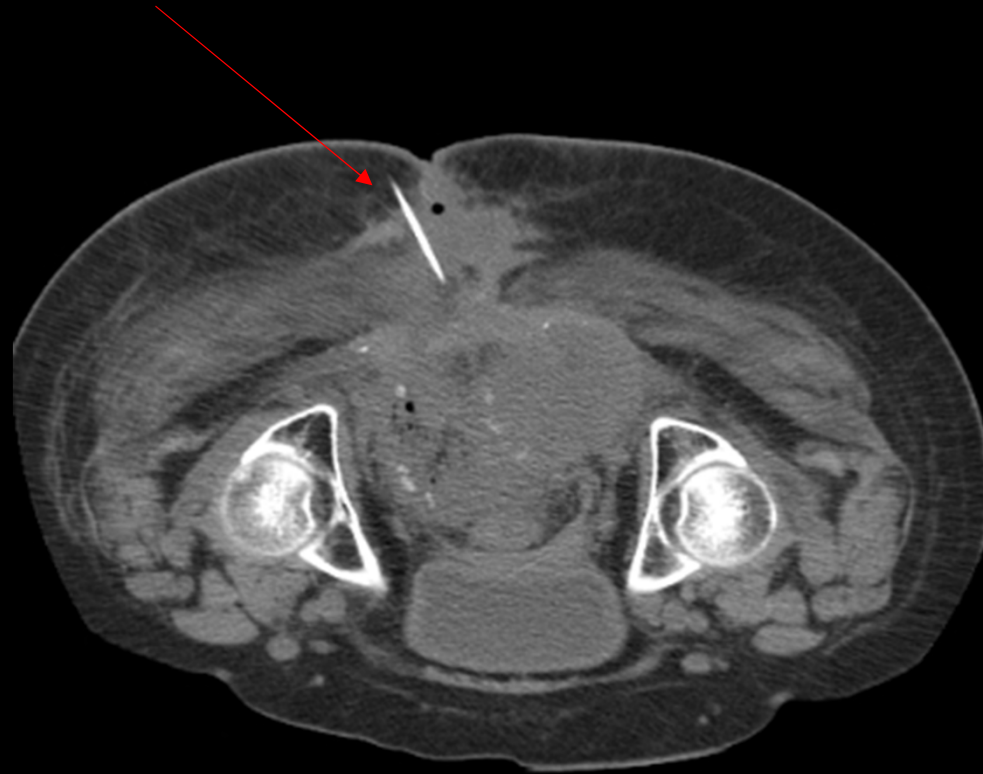


Breast abscess

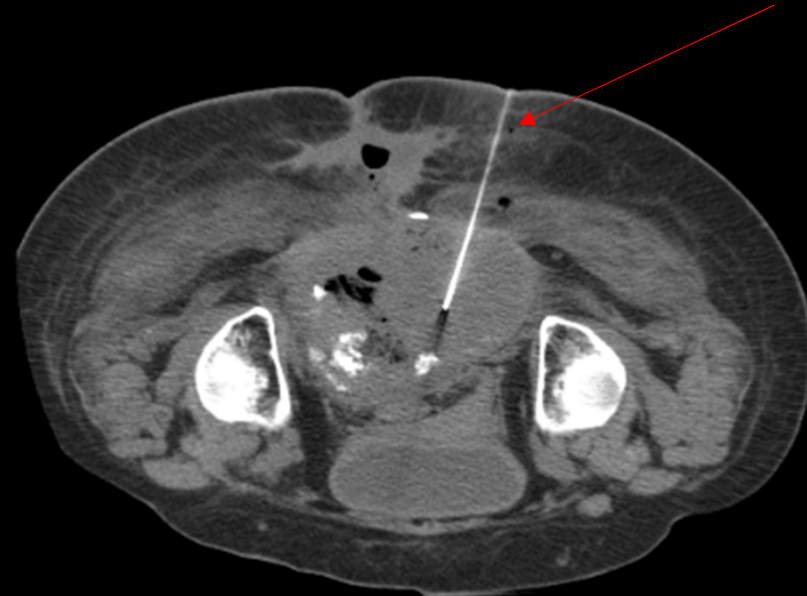
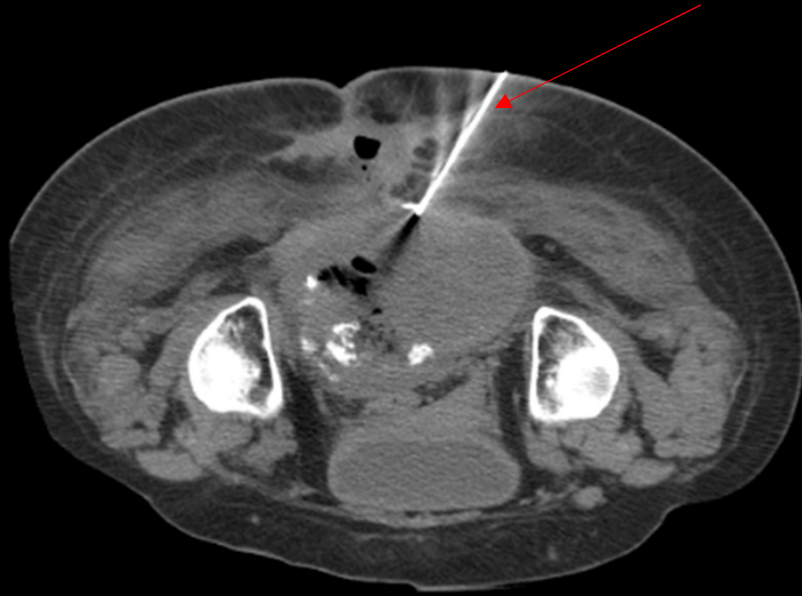
Final Diagnosis and Treatment

- Sepsis 2/2 L gluteal abscess
- IR was consulted to drain both masses
 - Aspirated 70 cc of pus from the gluteal fluid collection
 - Unable to aspirate the pelvic mass as there were some solid components
 - Recommended a biopsy of the mass
- Pt's fever, pain, and leukocytosis started improving after drainage
- Cx's sent after IR drainage are NGTD
- Discharged on PO abx and pain medications. FU scheduled with ORS
Onc

CT Guided Needle Aspiration (2/14/20)



CT Guided Needle Aspiration (2/14/20)



ACR appropriateness Criteria

- Acute non-localized abdominal pain

Variant 2: Acute nonlocalized abdominal pain and fever. Postoperative patient. Initial imaging.

Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	⊕⊕⊕
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	○
US abdomen	May Be Appropriate	○
CT abdomen and pelvis without IV contrast	May Be Appropriate	⊕⊕⊕
MRI abdomen and pelvis without IV contrast	May Be Appropriate	○
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	⊕⊕⊕⊕
Radiography abdomen	May Be Appropriate	⊕⊕
Fluoroscopy contrast enema	May Be Appropriate	⊕⊕⊕
Fluoroscopy upper GI series with small bowel follow-through	May Be Appropriate	⊕⊕⊕
FDG-PET/CT skull base to mid-thigh	Usually Not Appropriate	⊕⊕⊕⊕
WBC scan abdomen and pelvis	Usually Not Appropriate	⊕⊕⊕⊕
Nuclear medicine scan gallbladder	Usually Not Appropriate	⊕⊕

ACR appropriateness Criteria

- Management of infected fluid collection

American College of Radiology
ACR Appropriateness Criteria®
Radiologic Management of Infected Fluid Collections

Variant 1:

Patient with right lower quadrant abdominal pain, fever, and leukocytosis for 7 days. Physical examination shows no peritoneal signs. CT scan shows a thin-walled fluid collection, greater than 3 cm, adjacent to the cecum, nonvisualization of the appendix, and an appendicolith. Imaging findings are highly suspicious for appendicitis. Treatment includes antibiotics.

Procedure	Appropriateness Category
Conservative management only	Usually Not Appropriate
Surgical drainage	May Be Appropriate
Needle aspiration	May Be Appropriate
Percutaneous catheter drainage followed by delayed surgery	Usually Appropriate
Percutaneous catheter drainage only	Usually Appropriate

Total Cost of Imaging MHH (Inpatient)

- CXR 1V: \$683
- CTA Chest: \$4506
- CT Abdomen/Pelvis: \$7998
- Total: \$13,187

<https://www.memorialhermann.org/patients-caregivers/pricing-estimates-and-information>

Take Home Points

- If abscess is on the differential, imaging is recommended to confirm the dx
- Increased risk of developing an abscess with known risk factors in pt
- Percutaneous guided drainage (US/CT) is generally recommended vs surgical drainage

References

- <https://radiopaedia.org/articles/abscess?lang=us>
- <https://www.sciencedirect.com/topics/medicine-and-dentistry/tuboovarian-abscess>
- Politano AD, Hranjec T, Rosenberger LH, Sawyer RG, Tache Leon CA. Differences in morbidity and mortality with percutaneous versus open surgical drainage of postoperative intra-abdominal infections: a review of 686 cases. *Am Surg.* 2011;77(7):862–867.
- <https://radiopaedia.org/articles/neurofibromatosis-type-1?lang=us>



Questions?