

Abdominal Wall Infections

Emergency Radiology 2023

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8th Nordic Course in Emergency Radiology,
Aarhus, Denmark

Disclosures: None

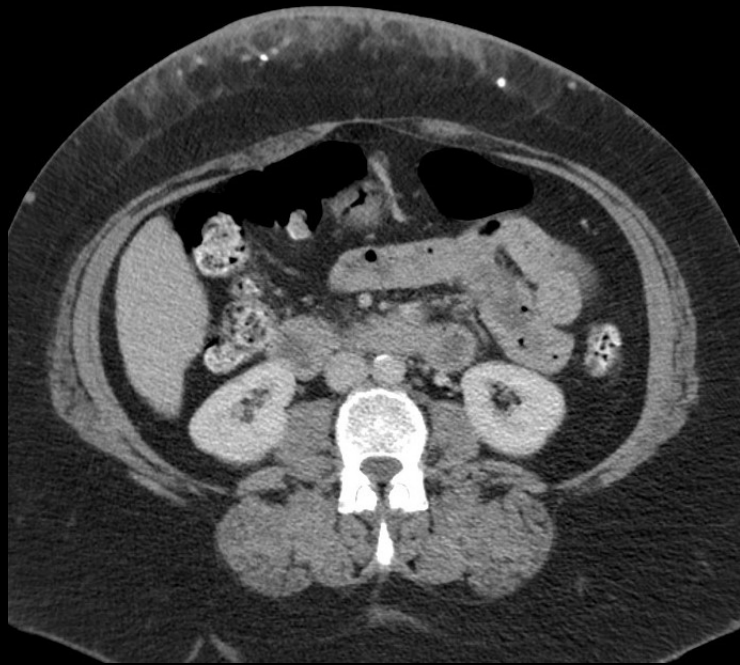
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- **Cellulitis & Paniculitis**
- **Necrotizing fasciitis**

- **Mesh**
- **Catheter and tube associated infections**

- **Differential Diagnosis**

Cellulitis



- Very common!
- Skin erythema, warmth, often diagnosis is clinically made and so no imaging is needed.
- Regional lymphadenopathy and lymphangitis and systemic symptoms can be present

Nidus for infection & Risk factors for infection:

Foreign bodies

Poor circulation (PVD or diabetes)

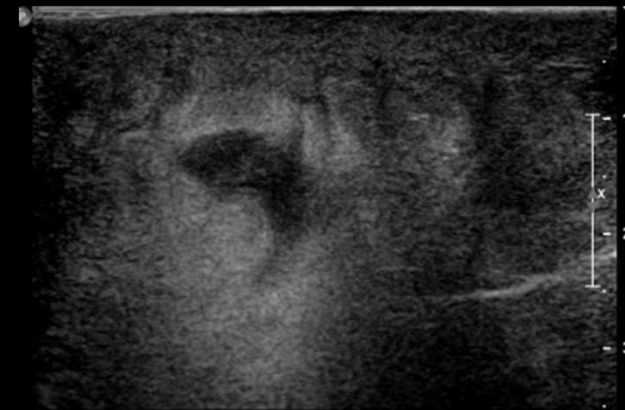
Poor immunity (HIV/AIDS, CKD, CLD)



Abdominal wall cellulitis + abscess

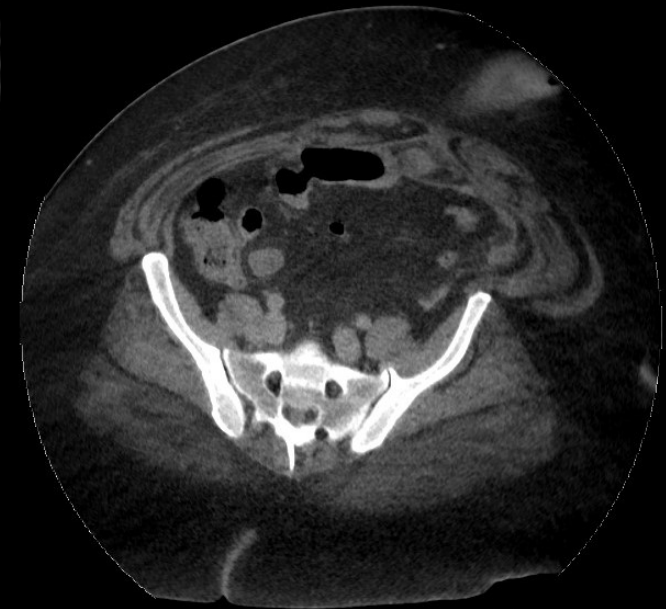
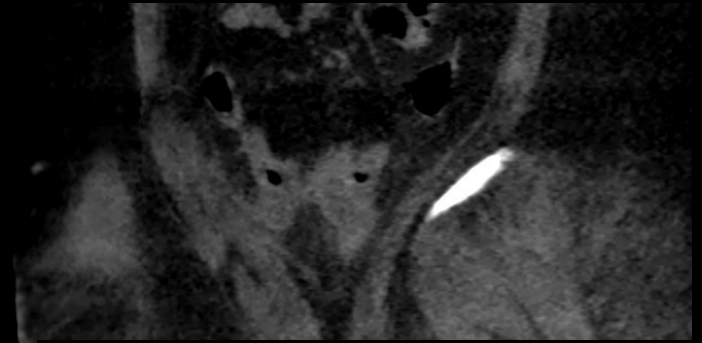
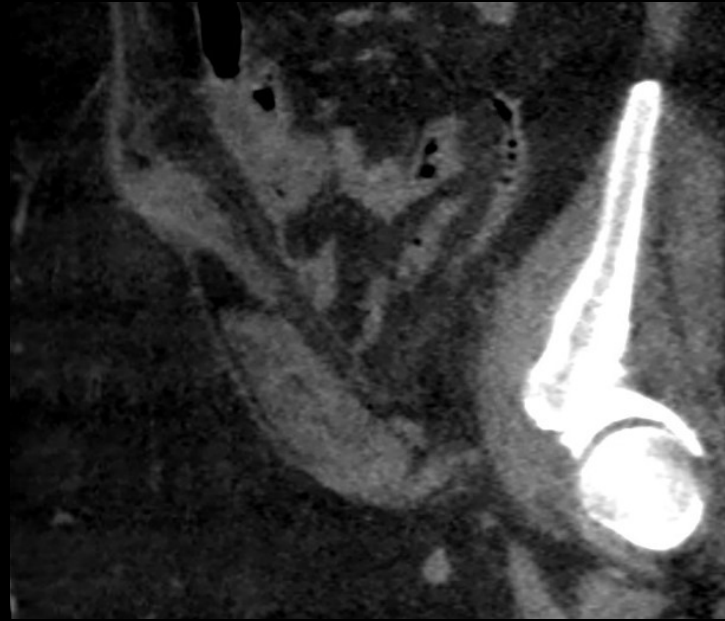
As the infection spreads to deeper tissues complications can occur:

- Abscess
- Myositis
- Necrotizing Fasciitis

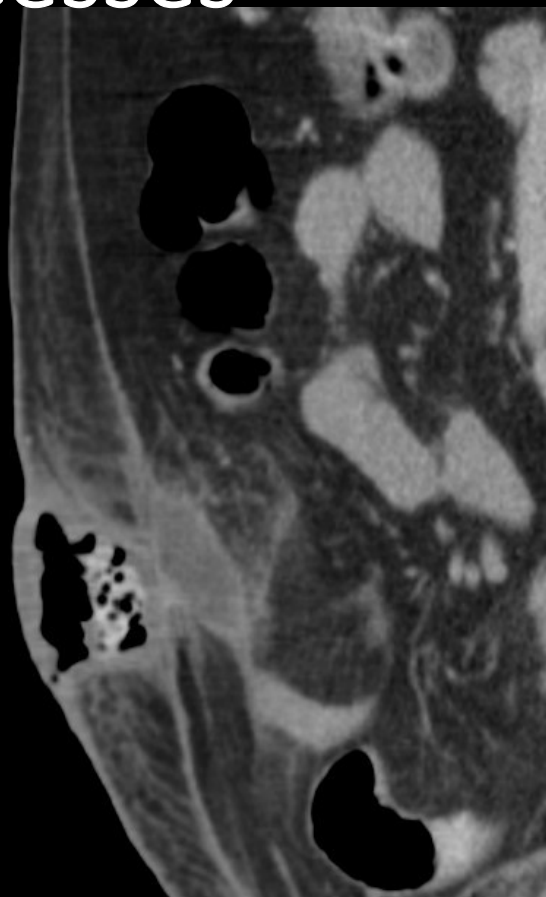
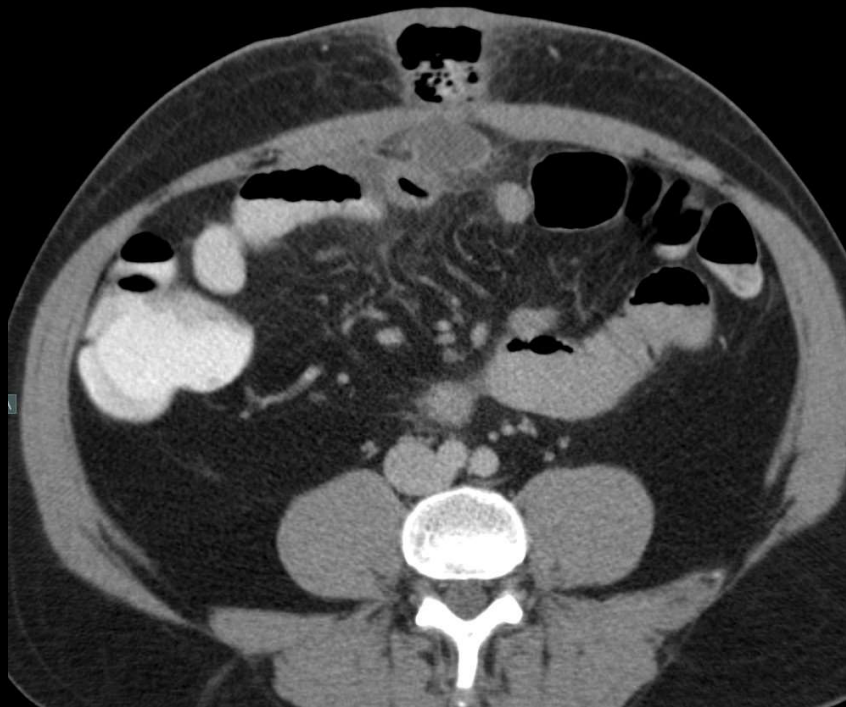


COR LLQ MEDIAL TO LAT cm

Urachal duct cyst with abscess

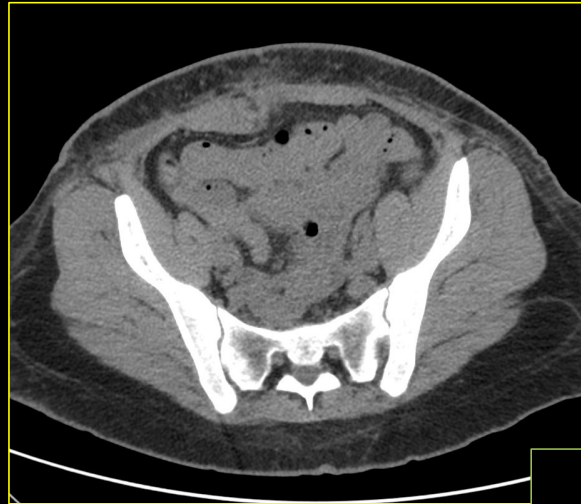


Deep abdominal wall infection with superficial and deep abscesses

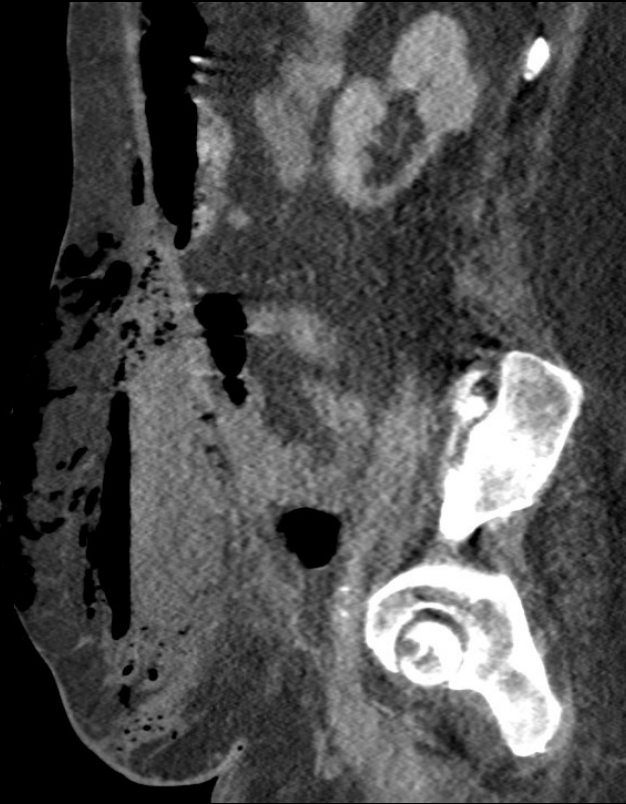
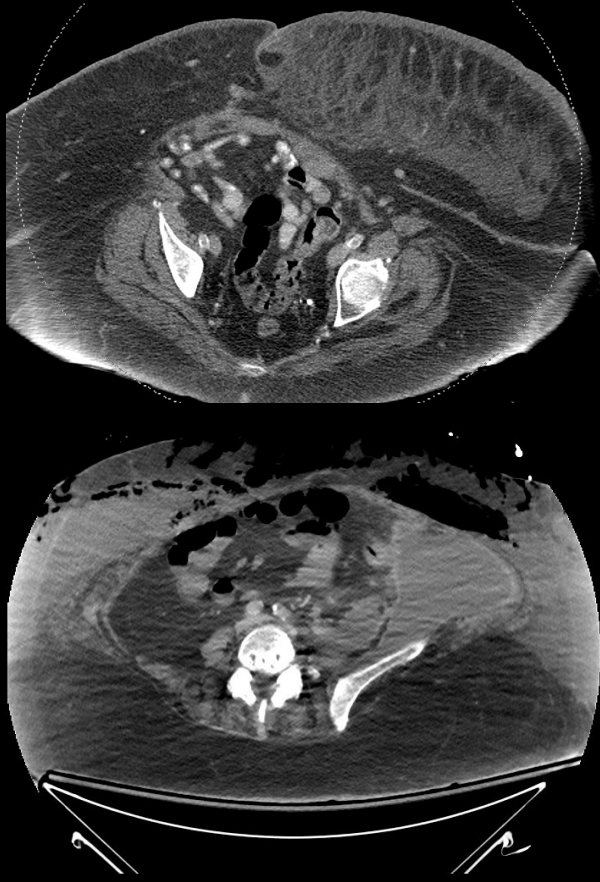


Post surgical infection of the abdominal wall “SSI”

- 0.5 - 3%
- 3 types – “Superficial incisional site” + “ Deep incisional” (Organ or Space)
- Risk factors: Open surgery, Emergency Surgery, Obesity, DM/compromised immunity, Oncological surgeries

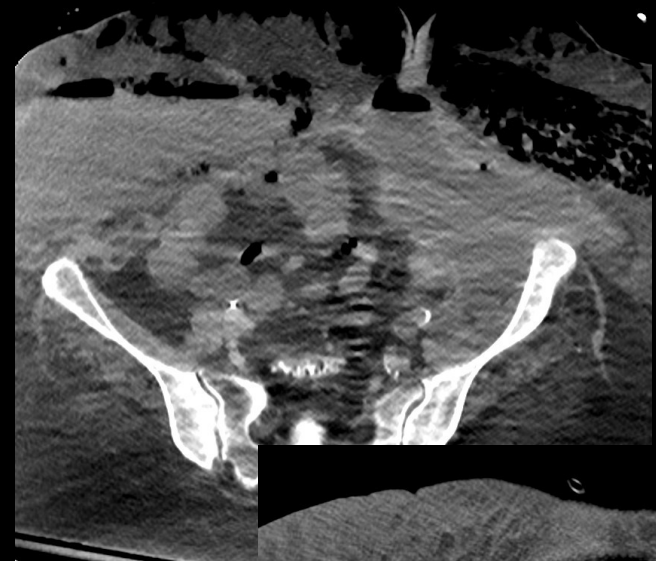


Necrotizing fasciitis



Necrotizing fasciitis

- **Surgical emergency!**
- Mortality high! 10 – 30%
- Knowing depth of infection for operative planning -> CT + repeat CT
- Fasciotomy and debridement of the necrotic tissue + broad spectrum antibiotics
- Often requires : “ Second look surgery”
- Until no necrotic tissue on direct exploration.



Abdominal Wall Mesh

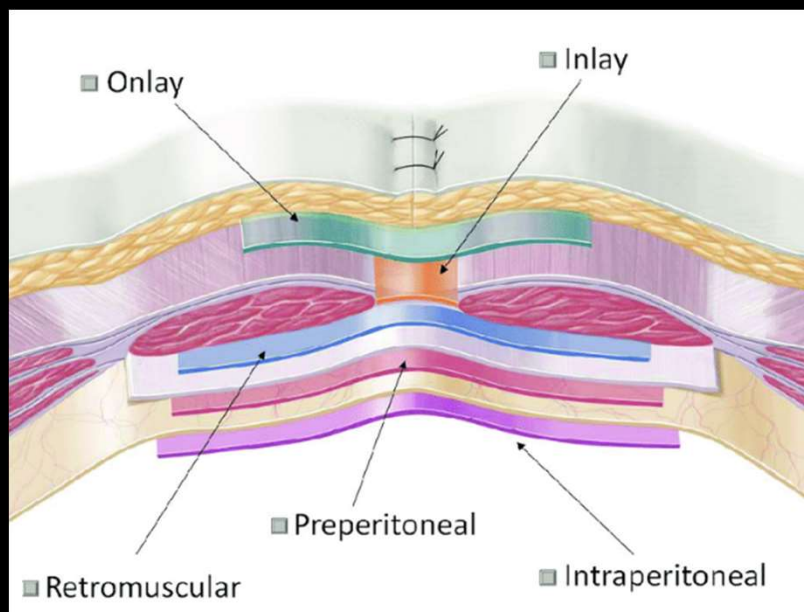


Image from: EuraHS terminology of mesh positions during ventral hernia repair - **Filip E Muysoms MD**

Onlay mesh placement: Mesh is placed overlying the defect (opening) made by the hernia.

Inlay mesh placement: Between the defect

Underlay mesh placement: “best” for reducing tension, below the fascia defect

Abdominal Wall Mesh Types

Material (choices):

- Absorbable mesh: degrades and loses strength
- Synthetic: most common, woven or nonwoven sheets.
- Coated or Composite: Can leave mesh in contact w/ bowel
- Biologic Mesh

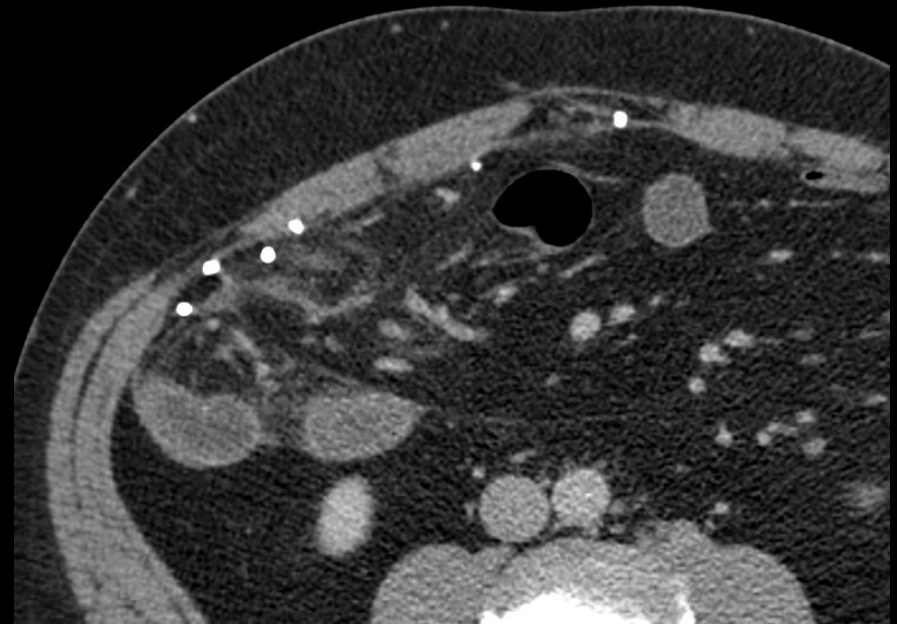
+ Other mesh factors:

- Tensile strength
- Pores

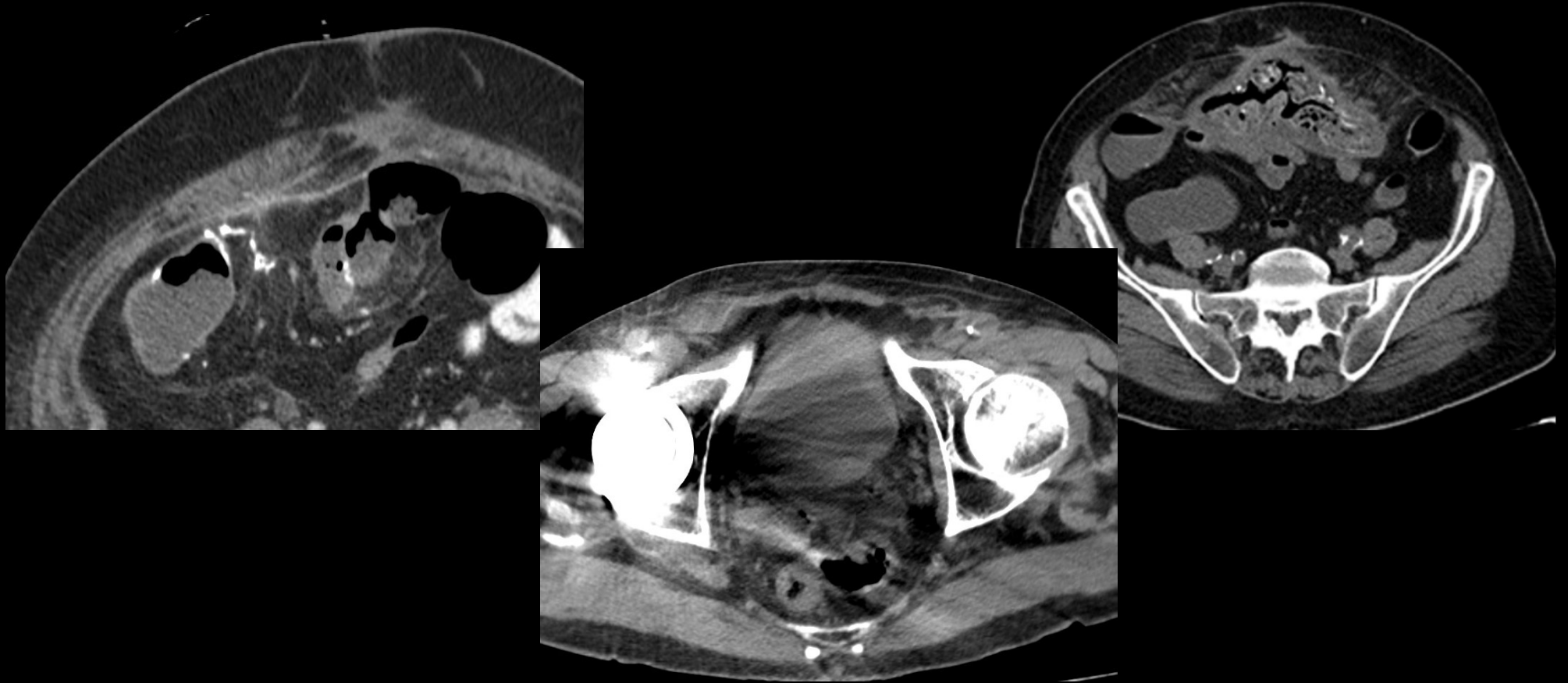
....Selection factors are complex:

Size of the hernia, location, and gap made by the hernia + Underlying clinical and patient factors + Surgeon preference.

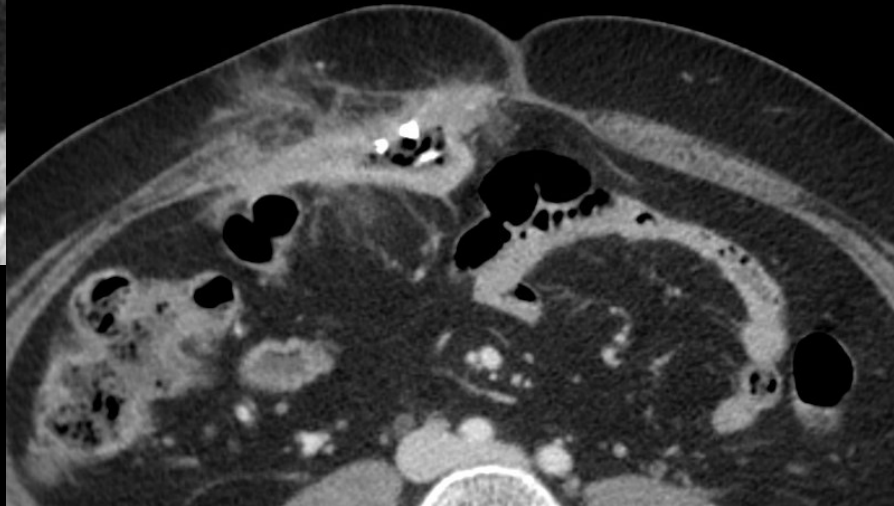
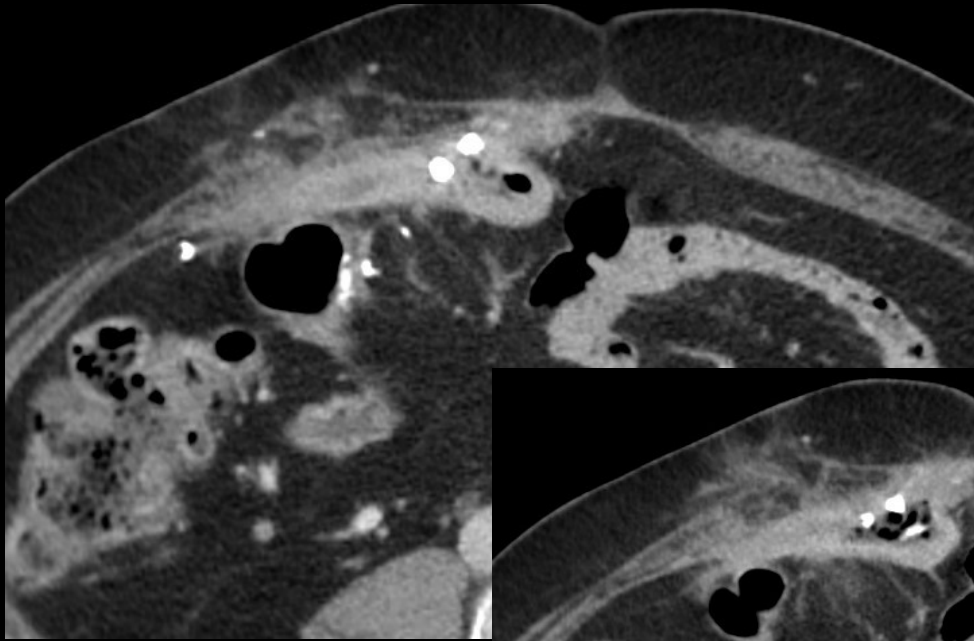
“Normal Mesh”



“Normal Mesh”



Mesh associated infection



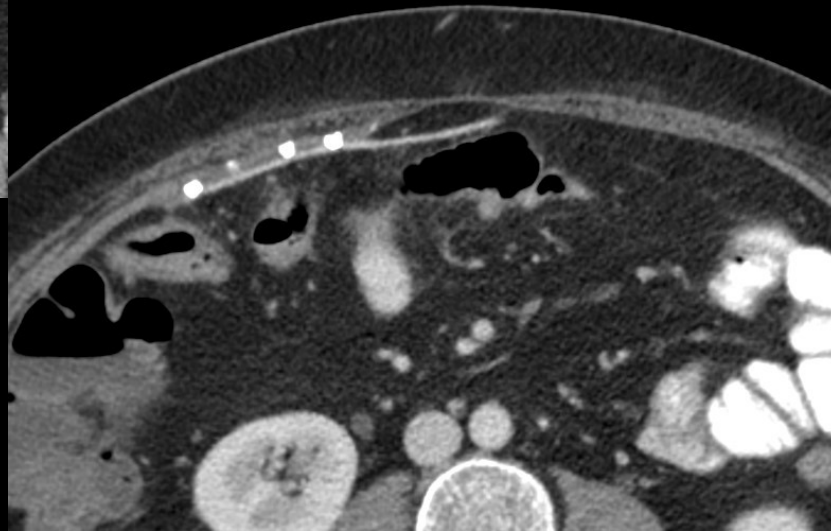
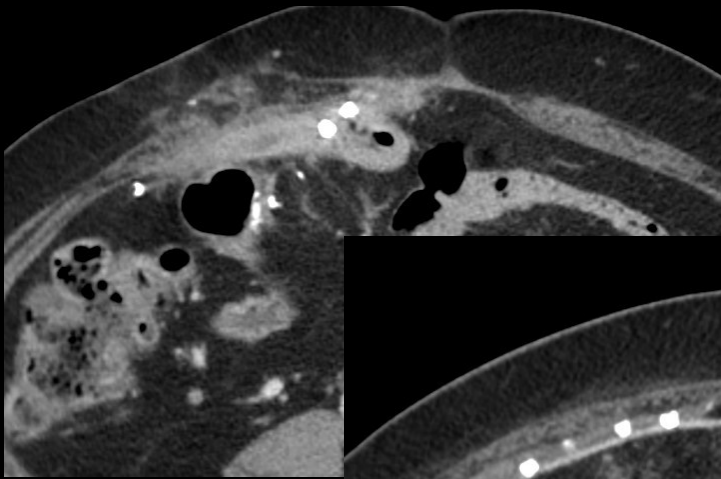
Symptoms

- Fever
- Pain
- Local swelling and discharge

Laboratory

- Leukocytosis
- Elevated ESR and CRP

Mesh associated infection



8 weeks later

Management of infected mesh:

- Antibiotics
- Cleaning
- Removal

Can also depend on mesh type:

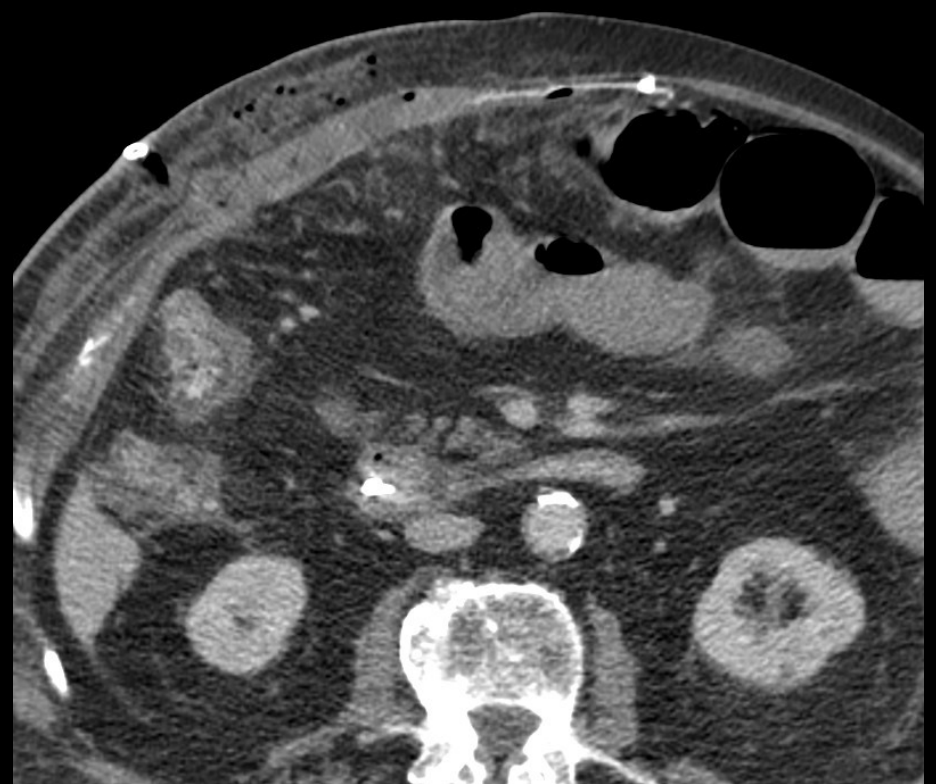
Infection of polyester or polypropylene mesh might be managed with drainage and antimicrobial agents only

Vs. surgically removed in cases of infection involving expanded polytetrafluoroethylene mesh

POD 3 Mesh, Pain



POD 3 Mesh, Pain

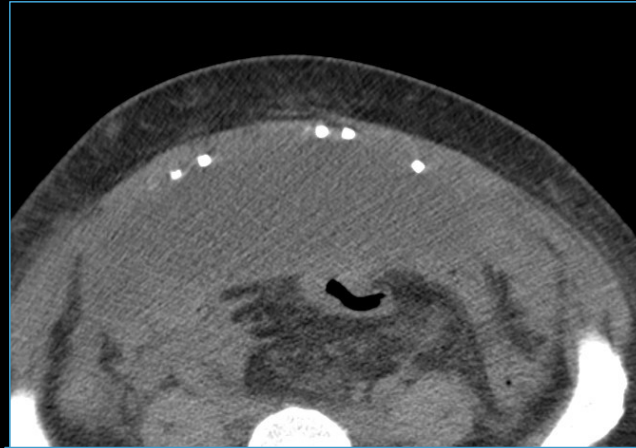


Mesh associated afebrile pain (2 patients)

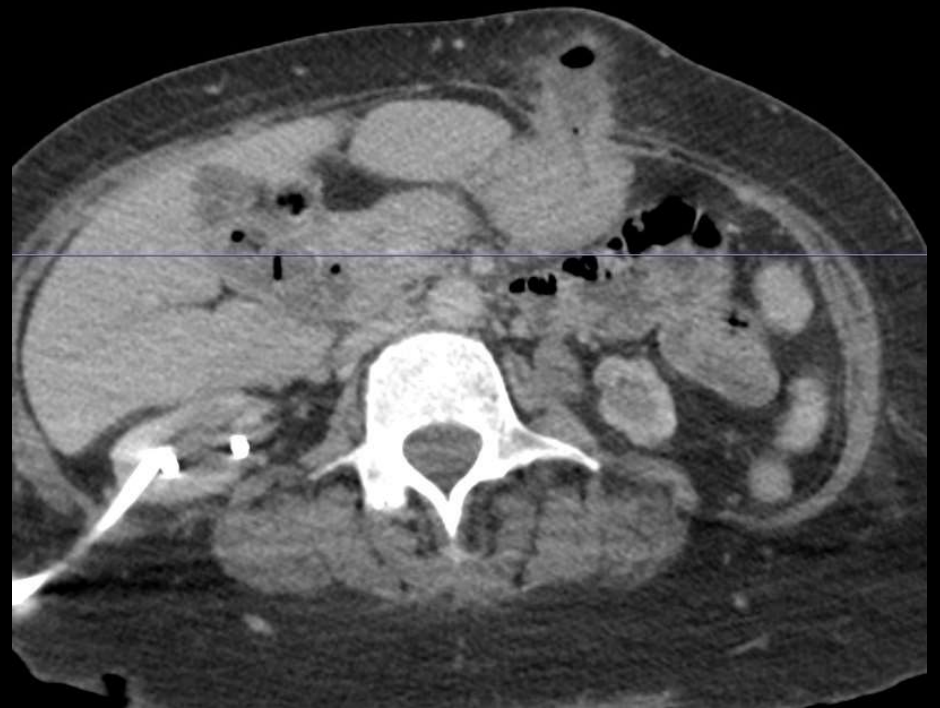
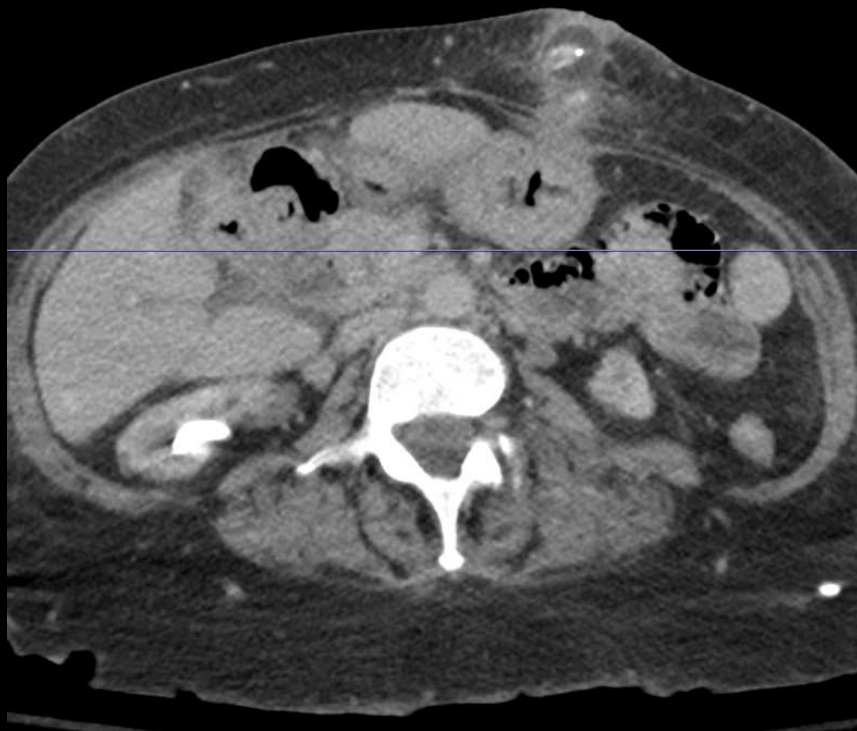


Mesh associated
hematoma

Mesh associated seromas



"Exit Site" abdominal wall infection



Summary

- Abdominal wall infections can range from cellulitis to deep infections including intraperitoneal spread
- Necrotizing fasciitis = surgical emergency
- Findings can be present on CT that indicate an abscess... but *imaging alone can not say if a collection is an abscess*
- Abdominal wall mesh infection depends on mesh type and mesh environment -> treatment is Abx and/or cleaning with removal if needed
- Check carefully for infection along skin sites of indwelling tubes and lines