AMSER Case of the Month September 2025

43 year-old male with abdominal and buttock pain

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Patient Presentation

- HPI: 42-year-old male with complicated surgical history (including prior perforated diverticulitis and multiple intra-abdominal abscesses) presents after being advised by Acute Care Surgery to come in for evaluation of abnormal CT findings.
- Patient also reports uncontrolled diarrhea, nausea, vomiting, anorexia, and tachycardia. He has left lower buttock pain with swelling, likely infectious (cellulitis vs. abscess). Denies fever, chills, chest pain, shortness of breath.

Patient Presentation

- PMHx: The patient has a complex medical and surgical history, including diverticulitis with perforation, inflammatory bowel disease, a history of abdominal wall abscess and wound dehiscence, and prior subtotal colectomy. He also has a history of anemia, colon polyps, GERD, rectal bleeding, obesity, situational anxiety, hypertension, and tobacco use.
- Vitals: T 36.5 °C, HR 135 bpm, RR 16, BP 96/72 mmHg, SpO_2 99% on room air
- PE: Diffuse abdominal tenderness without guarding or rebound. There is erythema, warmth, and tenderness over the left lower buttock extending into the groin, without crepitus. Multiple abdominal wounds are partially closed, with some open from prior drain sites but no purulence or surrounding erythema

Pertinent Labs

- CBC:
  - WBC: 14.39
  - Hemoglobin: 7.5
  - Neutrophils: 83%
  - Lymphocytes: 5%
  - RBC Morphology: Moderate hypochromia, ovalocytes
- BMP/CMP:
  - BUN: 26
  - Creatinine: 1.37
  - Sodium: 128
  - Chloride: 90
  - Glucose: 112
  - AG19
  - CO_2: 19
- Lactic Acid:
  - 2.3–2.9
- Wound Culture:
  - Many E. coli, Enterococcus faecalis, and Enterococcus faecium

What Imaging Should We Order?

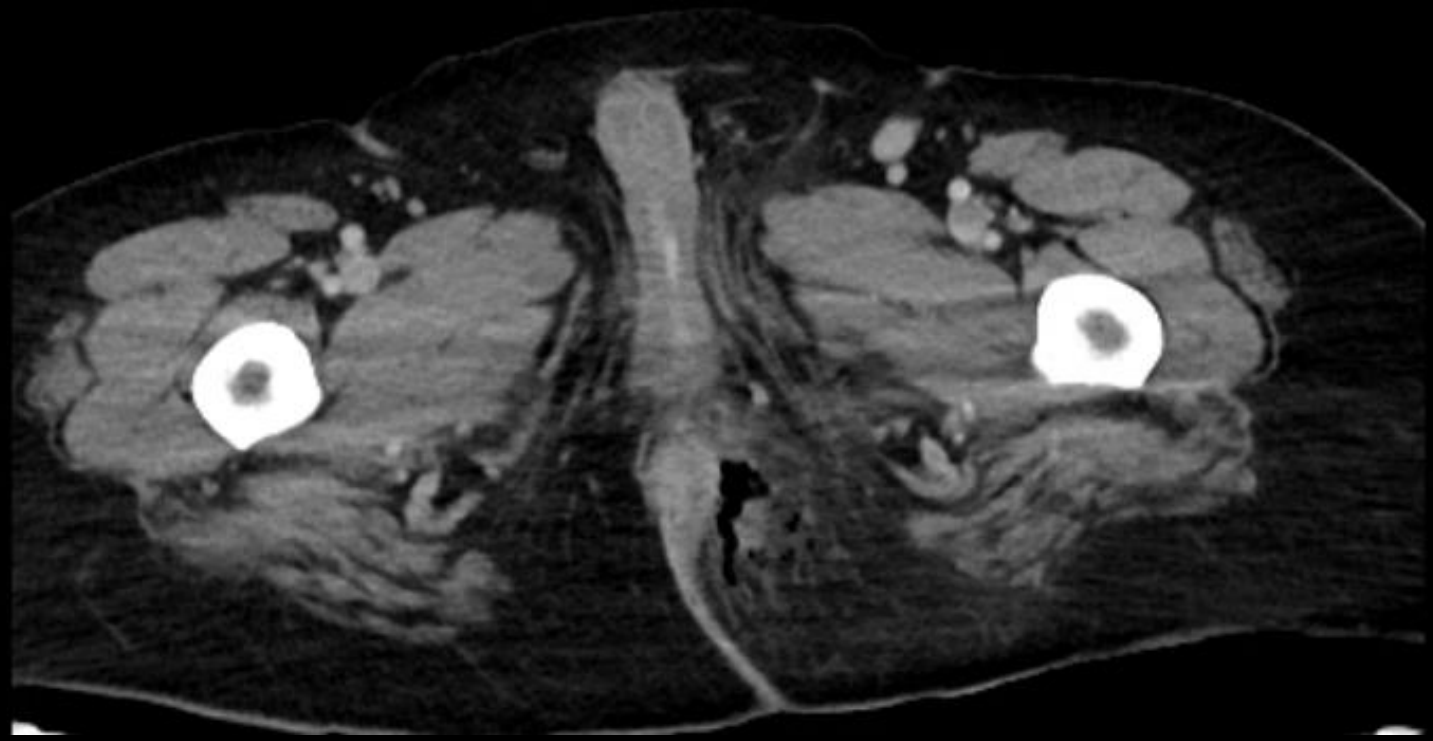
Select the applicable ACR Appropriateness Criteria

Variant 1: **Acute nonlocalized abdominal pain and fever. No recent surgery. Initial imaging.**

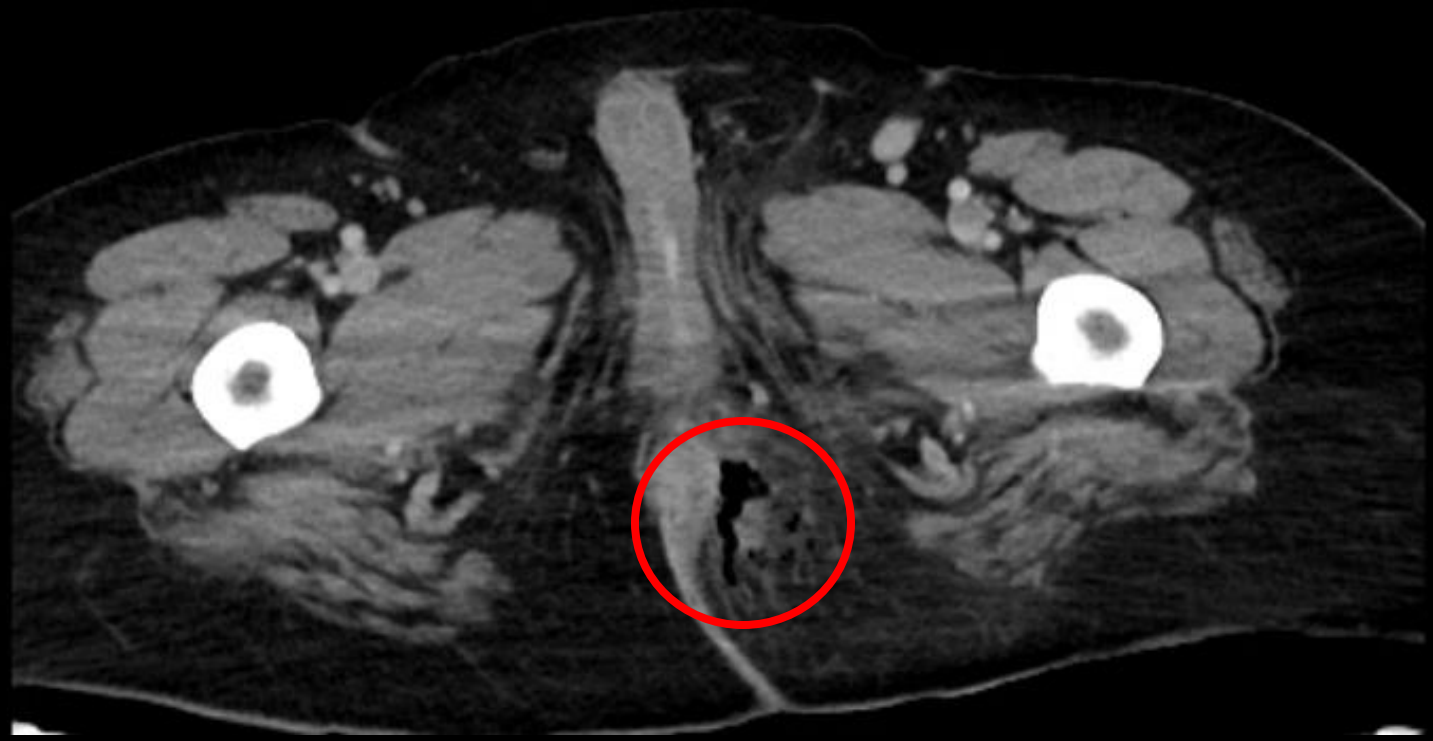
Procedure	Appropriateness Category	Relative Radiation Level
CT abdomen and pelvis with IV contrast	Usually Appropriate	☢☢☢
MRI abdomen and pelvis without and with IV contrast	May Be Appropriate	O
US abdomen	May Be Appropriate	O
CT abdomen and pelvis without IV contrast	May Be Appropriate	☢☢☢
MRI abdomen and pelvis without IV contrast	May Be Appropriate	O
CT abdomen and pelvis without and with IV contrast	May Be Appropriate	☢☢☢☢
Radiography abdomen	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	☢☢
Fluoroscopy contrast enema	Usually Not Appropriate	☢☢☢
Fluoroscopy upper GI series with small bowel follow-through	Usually Not Appropriate	☢☢☢

This imaging modality was ordered by the ED physician

Findings (unlabeled)



Findings (labeled)



Differential Diagnosis

- Fournier's Gangrene
  - Most concerning diagnosis due to subcutaneous emphysema and soft tissue gas
- Soft Tissue Abscess
  - Possible, given fat stranding and erythema; lack of discrete fluid collection argues against it
- Cellulitis
  - Supported by warmth, erythema, and tenderness without fluctuance or crepitus
- Post-surgical/Drain Tract Changes
  - Subcutaneous gas could represent residual air from recent procedures or drainage, less likely with clinical worsening.

The most concerning diagnosis is Fournier's gangrene of the left perineum, supported by CT findings of subcutaneous emphysema and clinical signs of infection. The patient was taken for urgent surgical intervention.

Final Dx:

Perirectal Abscess

Case Discussion: Clinical Management

- Initial Diagnosis & Intervention:
  - Patient presented with left perineal pain, diarrhea, leukocytosis, and CT findings concerning for Fournier's gangrene. Taken to the OR on 7/1 for incision and drainage of a left perirectal abscess. Surgical team did not confirm Fournier's intraoperatively
- Postoperative Course:
  - Persistent tachycardia post-op; managed with IV fluids
  - Wound packing and dressing changes performed daily
  - Close monitoring of urine output, labs, and pain control
  - Progressive concerns for fistula due to stool-stained wound packing
  - Follow-up CT with rectal contrast ordered to evaluate for perirectal fistula

Case Discussion: Follow-Up Imaging Labelled

Gas-filled tract in left ischiorectal fat extending to the anus, suggestive of a fistulous origin without contrast extravasation

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Case Discussion: Pathophysiology

- Perirectal abscess originates from infected anal glands; bacteria spread into the ischiorectal fossa[1]
- If untreated or inadequately drained, abscesses can erode tissue, forming a fistulous tract from the anal canal to the skin[1,2,3]
- Fistula-in-ano is common in chronic or recurrent infections, especially in patients with IBD, diabetes, or poor wound healing[4]
- Fournier's gangrene is a rapidly progressive necrotizing fasciitis of the perineum and genitalia that can arise from perianal or urogenital infections[5]
  - It involves fascial planes, often polymicrobial, and carries high mortality without urgent surgical debridement[5]

Case Discussion: Radiologic Features

- Perirectal Abscess:
  - CT: rim-enhancing fluid collection in ischiorectal/ischioanal fossa with fat stranding, gas[1]
  - Look for disruption of perianal fat planes, confined to soft tissues[1]
- Fistulous Tract:
  - CT: linear gas-filled tract or enhancing soft tissue between rectum and skin[4]
  - Often seen post-surgically or in chronic infections[4]
- Fournier's Gangrene
  - CT: extensive soft tissue gas, fascial thickening, fat stranding, fluid tracking along fascial planes[5]
  - Look for deep extension beyond superficial tissues, often bilateral[5]
- In this case: gas in the left ischiorectal fat extending to the anus suggested fistula, but initial concern was for Fournier's based on soft tissue gas

Case Discussion: Diagnostic Uncertainty – Imaging vs Intraoperative

- Initial CT imaging raised concern for Fournier's gangrene due to the presence of subcutaneous emphysema and perineal fat stranding
- Surgical exploration, however, revealed a localized perirectal abscess without evidence of fascial plane necrosis
- Follow-up CT with rectal contrast demonstrated a gas-filled tract to the anus, supporting a diagnosis of fistula-in-ano
- This case highlights the complexity of interpreting perineal gas on imaging, which can result from infection, fistula, or recent surgery
- Emphasizes the importance of integrating radiologic findings with clinical and operative data for accurate diagnosis and management.

Case Discussion: Radiology and Clinical Integration

- Key Radiologic Clues:
  - Localized perirectal gas = likely abscess or fistula[1]
  - Diffuse soft tissue gas along fascial planes = Fournier's[5]
  - Use rectal contrast CT to evaluate fistula tract anatomy[4]
- Clinical Correlation is Essential:
  - Fournier's = rapidly progressive, toxic appearance, pain out of proportion[5]
  - Perirectal abscess = localized pain, swelling, often febrile but stable[1]
  - Fistula = chronic, recurrent drainage or non-healing wounds[4]
- Bottom Line:
  - Radiology can guide, but surgical findings are diagnostic. Maintain broad differential in perineal infections.

References:

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2. Tarasconi A, Perrone G, Davies J, et al. Anorectal Emergencies: WSES-AAST Guidelines. World J Emerg Surg. 2021;16(1):48. doi:10.1186/s13017-021-00384-x
3. Bender F, Eckerth L, Fritzenwanker M, et al. Drug Resistant Bacteria in Perianal Abscesses Are Frequent and Relevant. Sci Rep. 2022;12(1):14866. doi:10.1038/s41598-022-19123-6
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5. Wongwaisayawan S, Krishna S, Haroon M, Nisha Y, Sheikh A. Fournier Gangrene: Pictorial Review.