AMSER Case of the Month August 2026

61 y.o. male presents to the ED for lower extremity pain

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Patient Presentation

- HPI: 61-year-old male presents to the ED for bilateral lower extremity pain. Endorses subacute cold and painful extremities with intermittent paresthesias. Also endorses worsening fatigue and weight loss.
- PMH: None reported
- PSH: Current smoker, 1 ppd
- Vitals: Afebrile, normotensive, tachycardic with HR in 140s
- Notable Labs: Lactate – elevated to 4.1
- Physical exam: cold bilateral lower extremities, faintly Dopplerable pulses

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
Cold painful leg, sudden onset, vascular compromise suspected, initial imaging	3073532	Arteriography lower extremity	0.1-1mSv ☢☢	0.3-3 mSv [ped] ☢☢☢	Usually appropriate
		MRA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	0 mSv O	0 mSv [ped] O	Usually appropriate
		CTA lower extremity with IV contrast	1-10 mSv ☢☢☢	3-10 mSv [ped] ☢☢☢☢	Usually appropriate
		CTA abdomen and pelvis with bilateral lower extremity runoff with IV contrast	10-30 mSv ☢☢☢☢		Usually appropriate
		US duplex Doppler lower extremity	0 mSv O	0 mSv [ped] O	May be appropriate
		MRA abdomen and pelvis with bilateral lower extremity runoff without IV contrast	0 mSv O	0 mSv [ped] O	May be appropriate
		MRA lower extremity without and with IV contrast	0 mSv O	0 mSv [ped] O	May be appropriate
		MRA lower extremity without IV contrast	0 mSv O	0 mSv [ped] O	May be appropriate
		US duplex Doppler aorta abdomen	0 mSv O	0 mSv [ped] O	Usually not appropriate
		US intravascular aorta and iliofemoral system	0 mSv O	0 mSv [ped] O	Usually not appropriate

This imaging modality was ordered by the ER physician due to concern for limb ischemia

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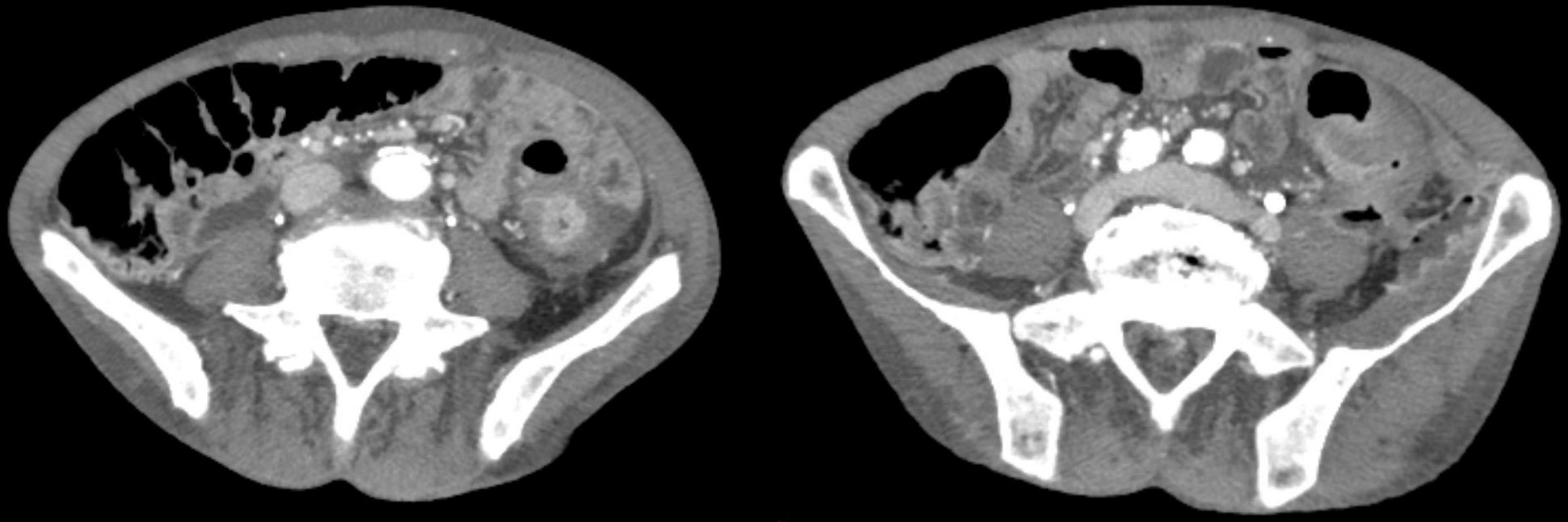
Findings (unlabeled)



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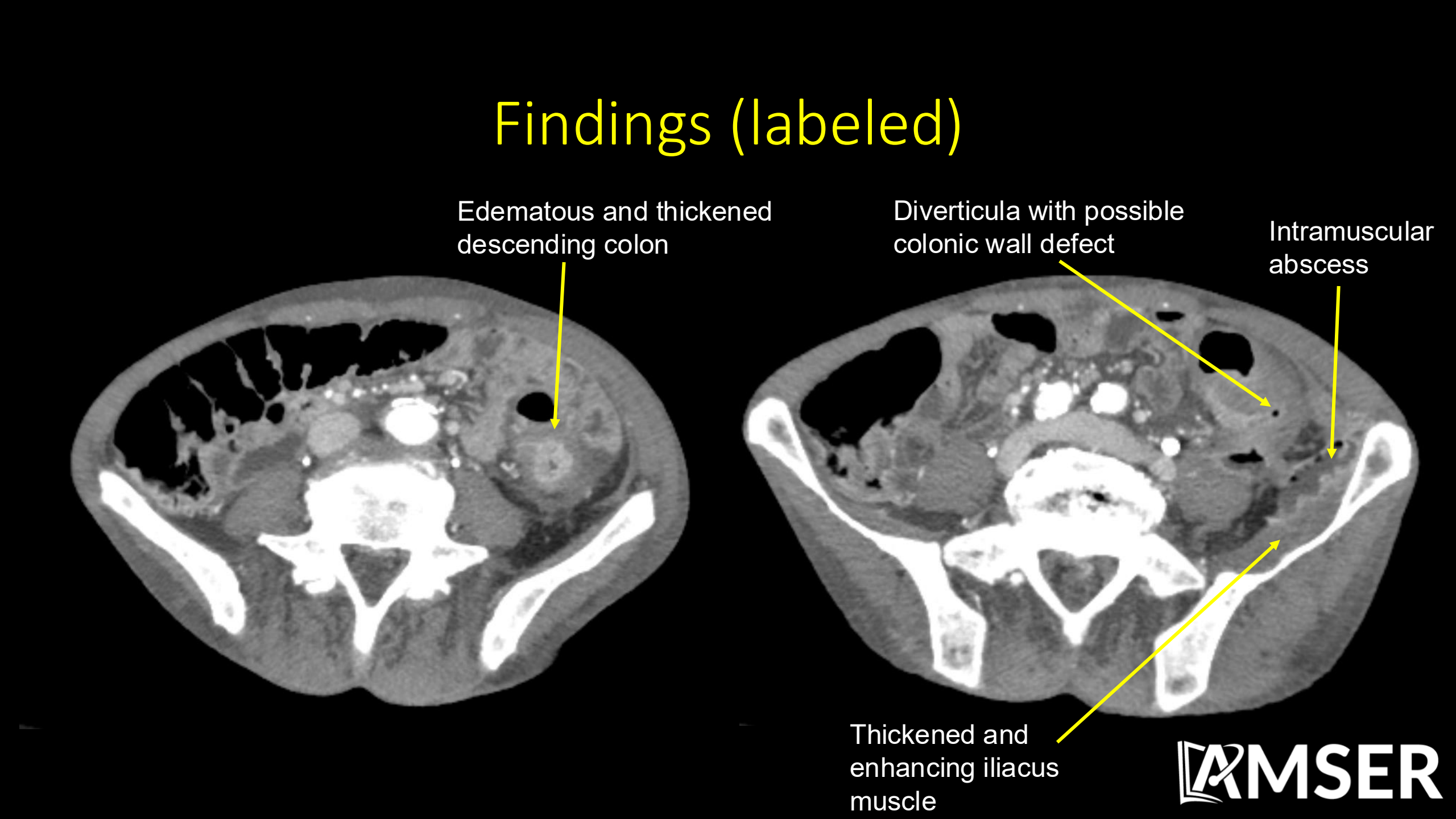

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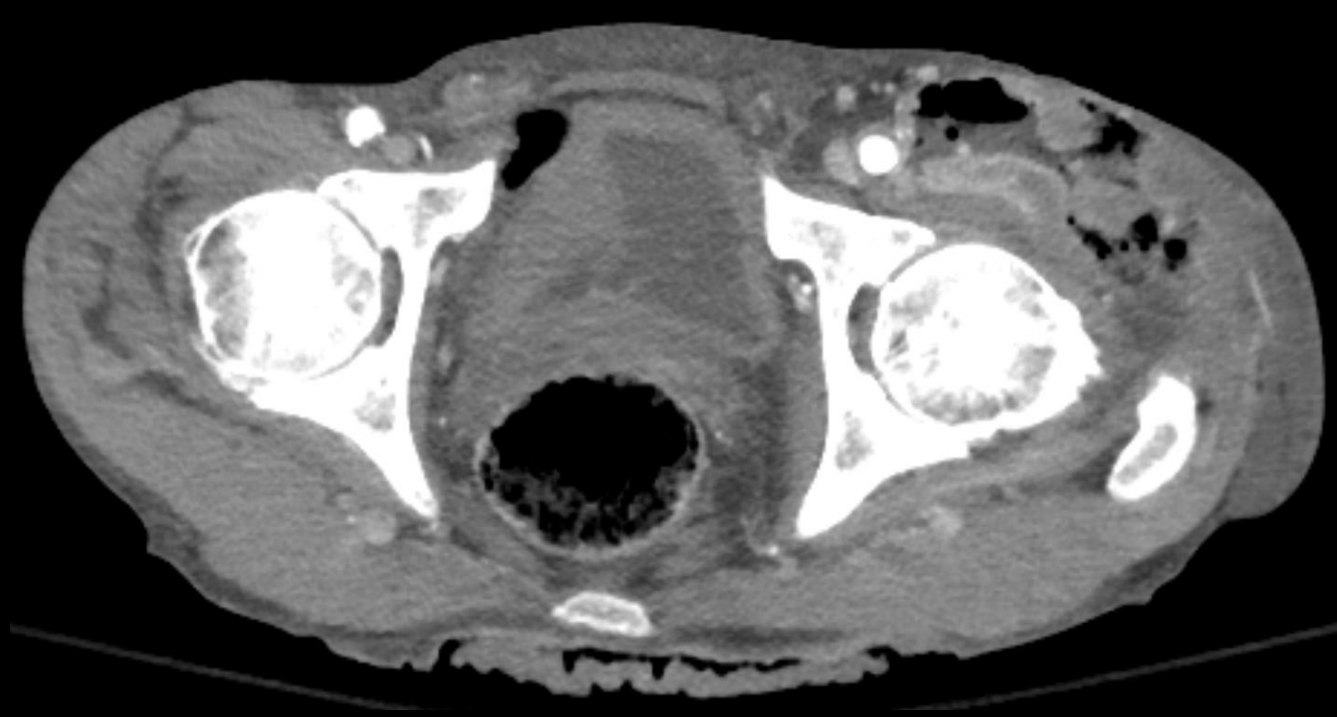

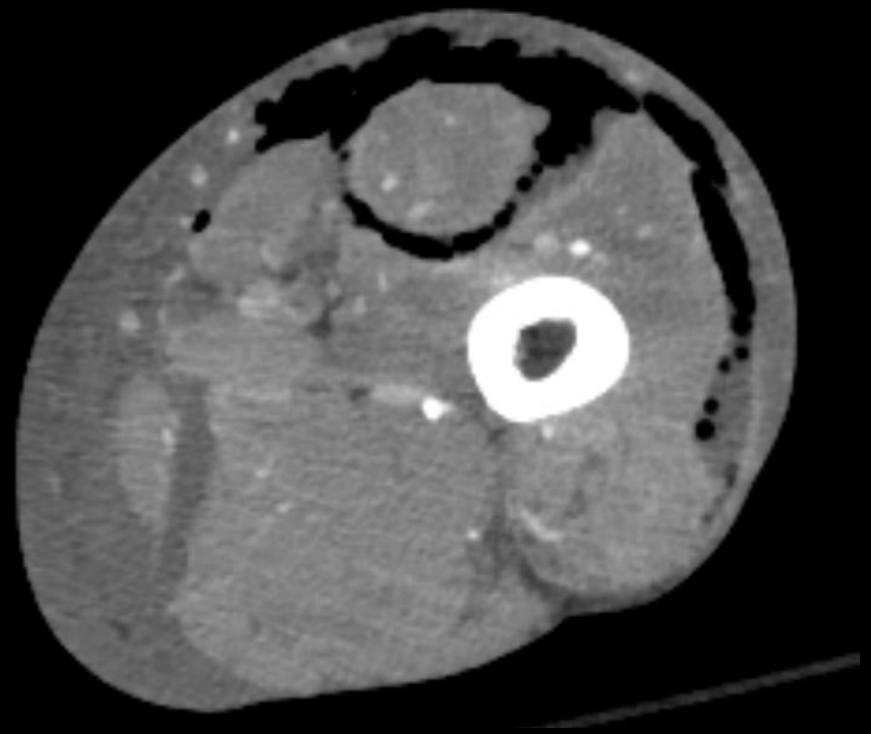

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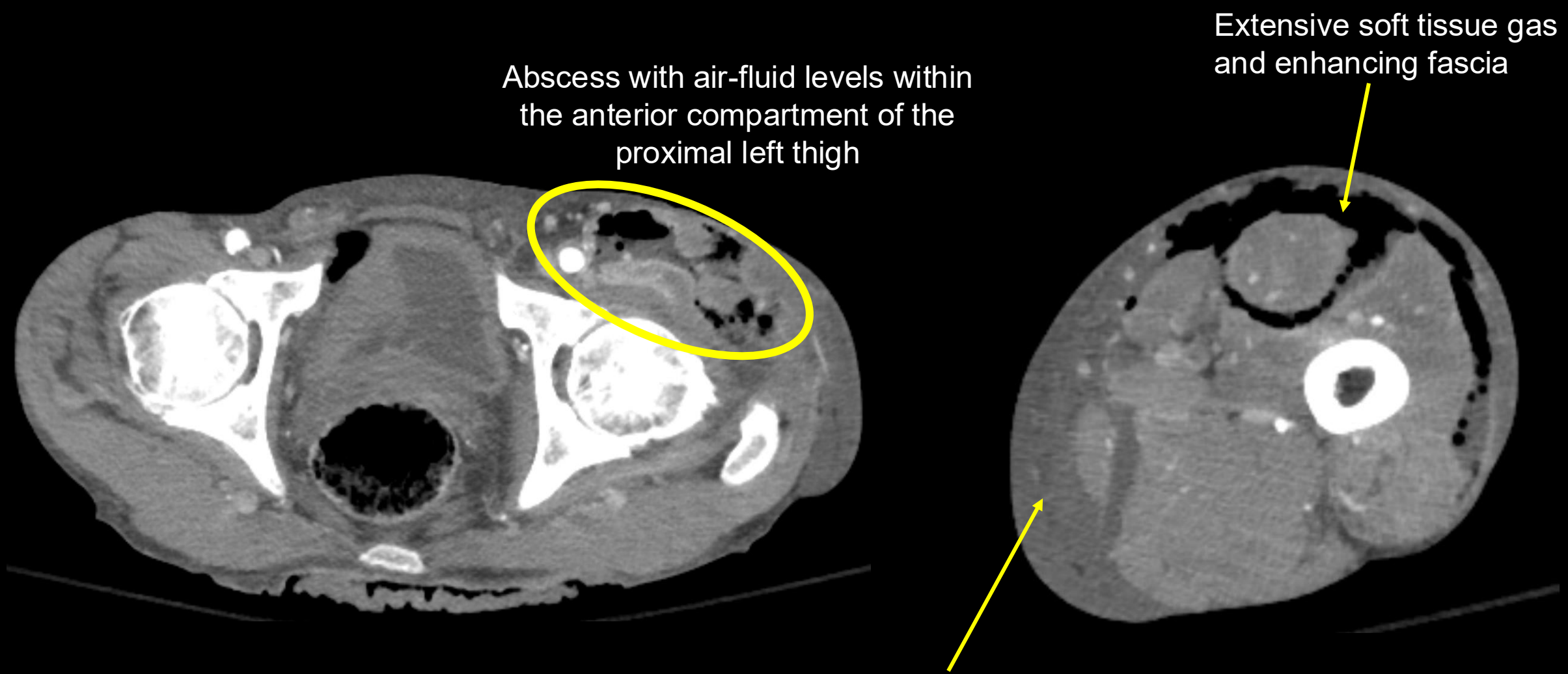

Final Dx:

Perforated sigmoid diverticulitis complicated by lower extremity necrotizing soft tissue infection (NSTI)

Case Discussion

- Colonic diverticulitis is complication of diverticulosis and imaging plays a crucial role in diagnosis, especially as in this case when classical symptoms such as severe abdominal pain and changes in bowel habits are absent[1,2]
- Classic CT imaging signs for diverticulitis include pericolonic stranding, segmental wall thickening, abscess formation, and pneumoperitoneum (if perforated)[3]
- Standard treatment for perforated diverticulitis is rapid surgery with partial colectomy via the Hartmann procedure[4]

Case Discussion

- Secondary NSTI is a very rare complication of perforated diverticulitis[5]
  - Pathophysiology: Diverticular perforation -> fecal microbiota escape the colonic lumen -> infection tracks along fascial planes of the abdominal wall, retroperitoneum, flank, or thigh -> toxins produced by bacteria trigger inflammation and tissue necrosis
- Cross-sectional imaging and knowledge of anatomy and fascial divisions can aid in identifying the primary intra-abdominal source and the extent of extra-abdominal infectious spread
- Early recognition and surgical source control with subsequent debridements are critical due to the high morbidity and mortality associated with NSTI[6]

References:

1. You H, Sweeny A, Cooper ML, Von Papen M, Innes J. The management of diverticulitis: a review of the guidelines. *Med J Aust*. 2019;211(9):421-427.

2. Humes DJ, Spiller RC. Review article: The pathogenesis and management of acute colonic diverticulitis. *Aliment Pharmacol Ther*. 2014;39(4):359-370.

3. Horton KM, Corl FM, Fishman EK. CT evaluation of the colon: inflammatory disease. *Radiographics*. 2000;20(2):399-418.

4. Brown RF, Lopez K, Smith CB, Charles A. Diverticulitis: A Review. *JAMA*. Published online July 24, 2025.

5. Kumar D, Cortés-Penfield NW, El-Haddad H, Musher DM. Bowel Perforation Resulting in Necrotizing Soft-Tissue Infection of the Abdomen, Flank, and Lower Extremities. *Surg Infect (Larchmt)*. 2018 Jul;19(5):467-472.

6. McDermott J, Kao LS, Keeley JA, Grigorian A, Neville A, de Virgilio C. Necrotizing Soft Tissue Infections: A Review. *JAMA Surg*. 2024;159(11):1308-1315.

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