

AMSER Case of the Month

October 2026

0-day-old male presenting with meconium peritonitis.

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Patient Presentation

- **HPI**

- 0-day-old male born gestational age 37w2d presents with meconium peritonitis.
- Patient was feeding and stooling well but had multiple episodes of non-bilious emesis.

- **PMH**

- Born at full term via C-section to a 37 y/o G1P1001 mother.
- Pregnancy was the result of in vitro fertilization.
- Prenatal ultrasound of the scrotum at 33 weeks revealed bilateral hydrocele with echogenic foci, likely calcifications from meconium orchitis.
- Prenatal ultrasound at 35 weeks showed calcifications in the liver. In the setting of prenatal findings concerning for meconium orchitis, they may reflect peritoneal surface or subcapsular meconium calcifications, suggestive of meconium peritonitis.

Pertinent Physical Exam and Labs

- **Physical Exam:** Abdomen was soft, non-distended, and nontender. Normal bowel sounds x4 quadrants. GU exam demonstrated large, left sided suspected inguinal hernia that was soft and reducible with some persistence. Scrotal sac was mildly edematous. Left scrotum underdeveloped. Testes were difficult to palpate.
- **Labs:** none

What Imaging Should We Order?

Select the applicable ACR Appropriateness Criteria

Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
Abdominal pain, acute, bowel obstruction suspected, no hx of abdominal surgery, initial imaging	3199550	● Radiography abdomen and pelvis	1-10 mSv ⊕⊕⊕⊕	0.3-3 mSv [ped] ⊕⊕⊕	Usually appropriate
		● US abdomen	0 mSv ○	0 mSv [ped] ○	May be appropriate
		● US duplex Doppler abdomen	0 mSv ○	0 mSv [ped] ○	May be appropriate
		● CT abdomen and pelvis with IV contrast	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	May be appropriate
		● Fluoroscopy contrast enema	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● Fluoroscopy small bowel follow-through	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● Fluoroscopy upper GI series	1-10 mSv ⊕⊕⊕⊕	0.3-3 mSv [ped] ⊕⊕⊕	Usually not appropriate
		● Fluoroscopy upper GI series with small bowel follow-through	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● MRI abdomen and pelvis with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRI abdomen and pelvis without and with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRI abdomen and pelvis without IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● CT abdomen and pelvis without IV contrast	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● CT abdomen with IV contrast	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● CT abdomen without IV contrast	1-10 mSv ⊕⊕⊕⊕	3-10 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● CT abdomen and pelvis without and with IV contrast	10-30 mSv ⊕⊕⊕⊕	10-30 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate
		● CT abdomen without and with IV contrast	10-30 mSv ⊕⊕⊕⊕	10-30 mSv [ped] ⊕⊕⊕⊕	Usually not appropriate

This imaging modality was ordered by the physician

Select the applicable ACR Appropriateness Criteria

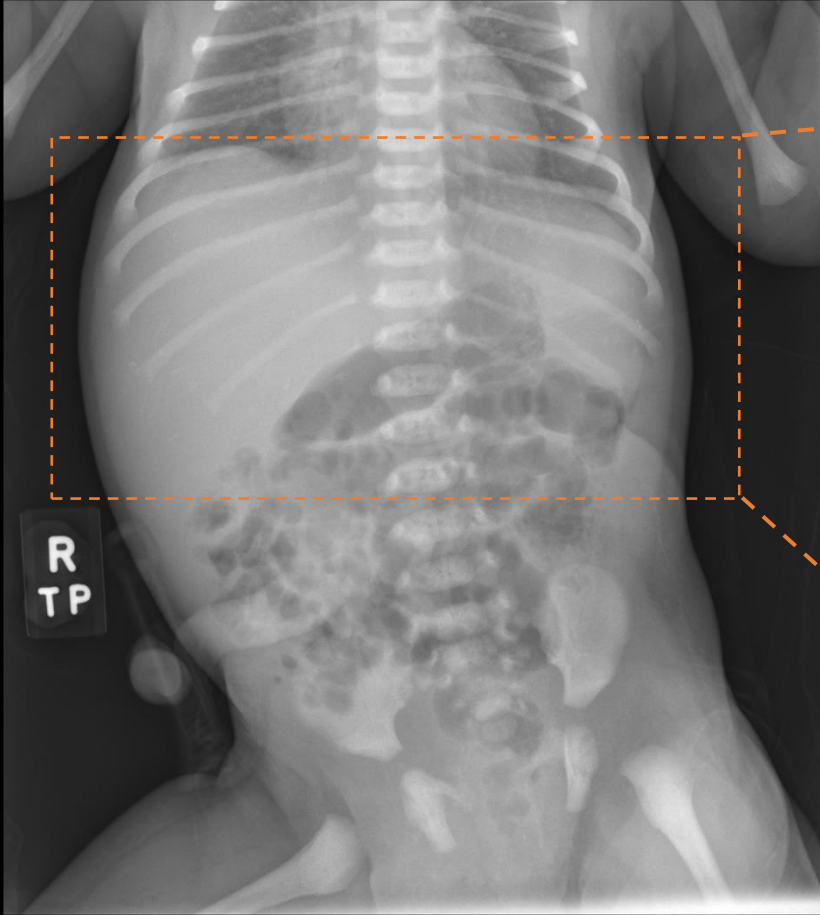
This imaging modality was ordered by the physician

Scenario	Scenario ID	Procedure	Adult RRL	Peds RRL	Appropriateness Category
Scrotum abnormality, palpable, newly diagnosed, no hx of infection, initial imaging	3194874	● US duplex Doppler scrotum	0 mSv ○	0 mSv [ped] ○	Usually appropriate
		● US scrotum	0 mSv ○	0 mSv [ped] ○	Usually appropriate
		● MRI pelvis (scrotum) without and with IV contrast	0 mSv ○	0 mSv [ped] ○	May be appropriate
		● MRI pelvis (scrotum) without IV contrast	0 mSv ○	0 mSv [ped] ○	May be appropriate
		● MRI abdomen and pelvis without and with IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● MRI abdomen and pelvis without IV contrast	0 mSv ○	0 mSv [ped] ○	Usually not appropriate
		● CT abdomen and pelvis with IV contrast	1-10 mSv ⊗⊗⊗	3-10 mSv [ped] ⊗⊗⊗⊗	Usually not appropriate
		● CT abdomen and pelvis without IV contrast	1-10 mSv ⊗⊗⊗	3-10 mSv [ped] ⊗⊗⊗⊗	Usually not appropriate
		● CT pelvis with IV contrast	1-10 mSv ⊗⊗⊗	3-10 mSv [ped] ⊗⊗⊗⊗	Usually not appropriate
		● CT pelvis without IV contrast	1-10 mSv ⊗⊗⊗	3-10 mSv [ped] ⊗⊗⊗⊗	Usually not appropriate
		● Nuclear medicine scan scrotum	1-10 mSv ⊗⊗⊗	0.3-3 mSv [ped] ⊗⊗⊗	Usually not appropriate
		● CT abdomen and pelvis without and with IV contrast	10-30 mSv ⊗⊗⊗⊗	10-30 mSv [ped] ⊗⊗⊗⊗⊗	Usually not appropriate
		● CT pelvis without and with IV contrast	10-30 mSv ⊗⊗⊗⊗	3-10 mSv [ped] ⊗⊗⊗⊗	Usually not appropriate

X-ray KUB - Findings (unlabeled)



X-ray KUB - Findings (labeled)



Normal nonobstructive bowel gas pattern

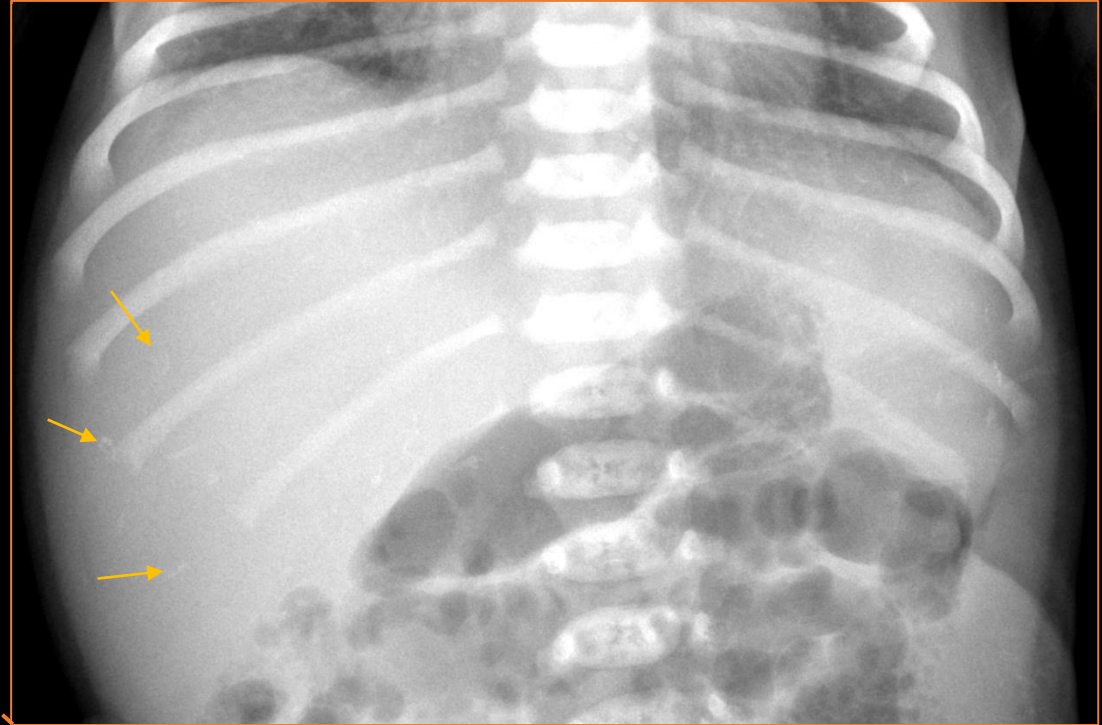
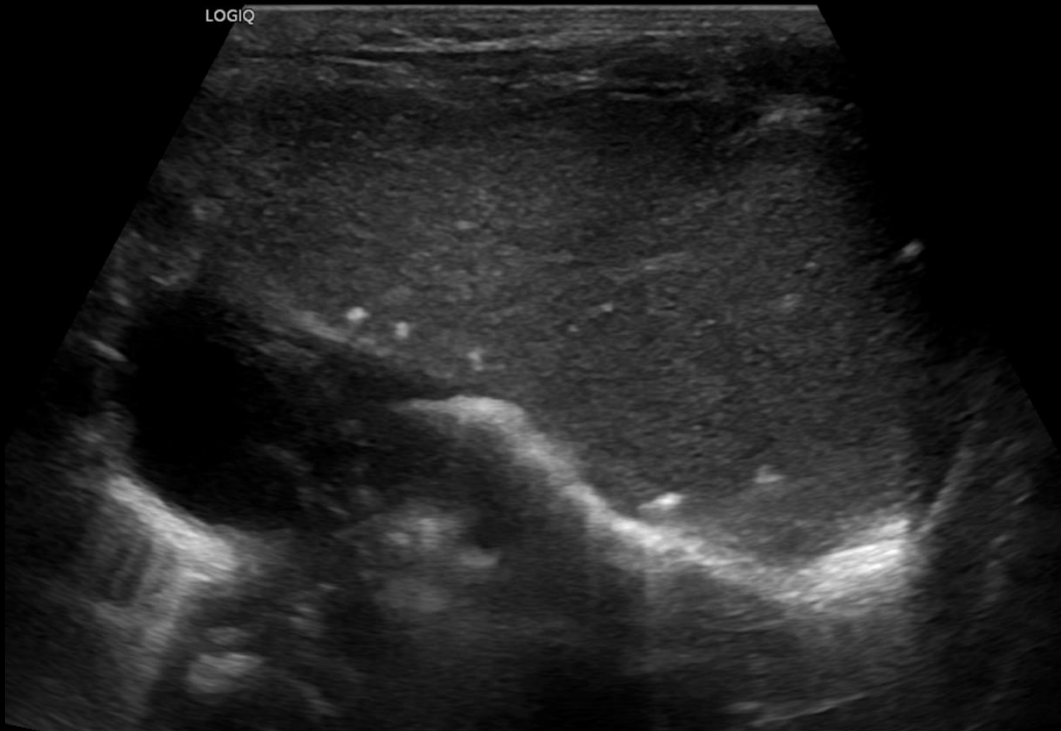


Image enlarged and exposed.

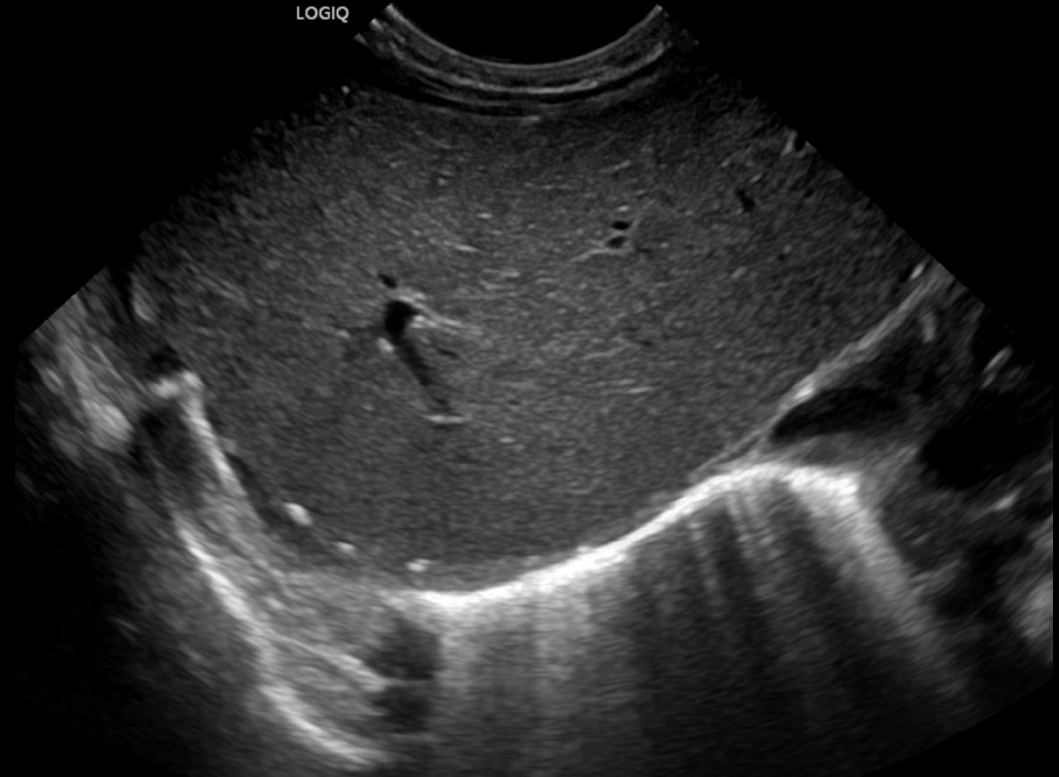
Arrows point to scattered calcifications in the upper abdomen.

US Abdomen - Findings (unlabeled)

Transverse left liver



Transverse right liver

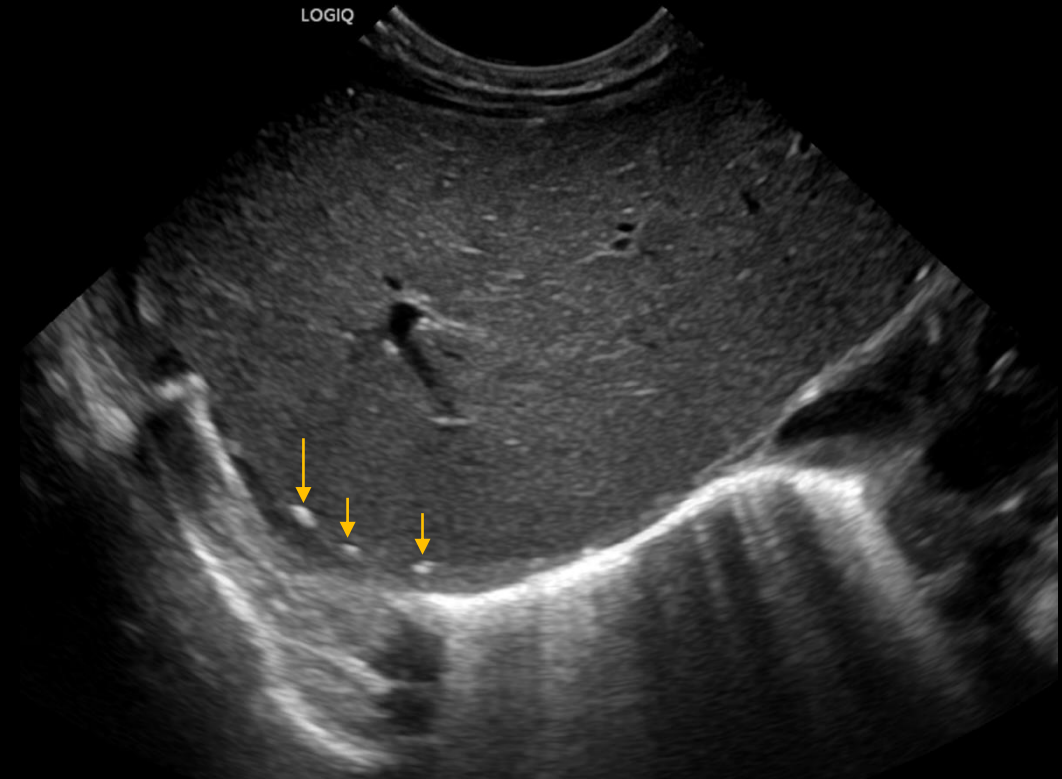


US Abdomen - Findings (labeled)

Transverse left liver



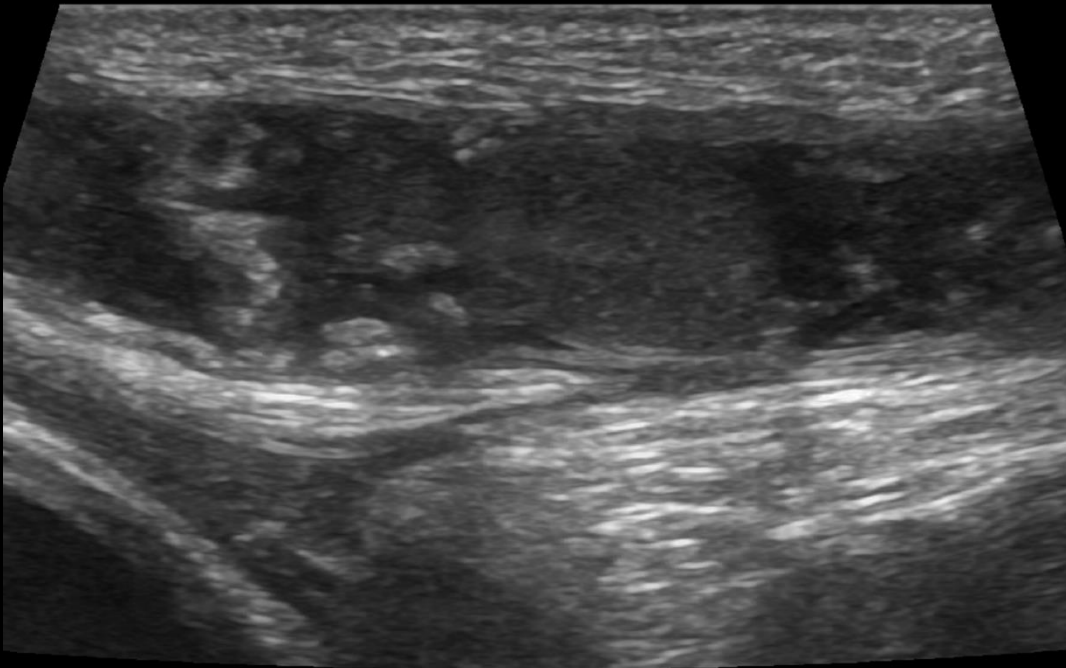
Transverse right liver



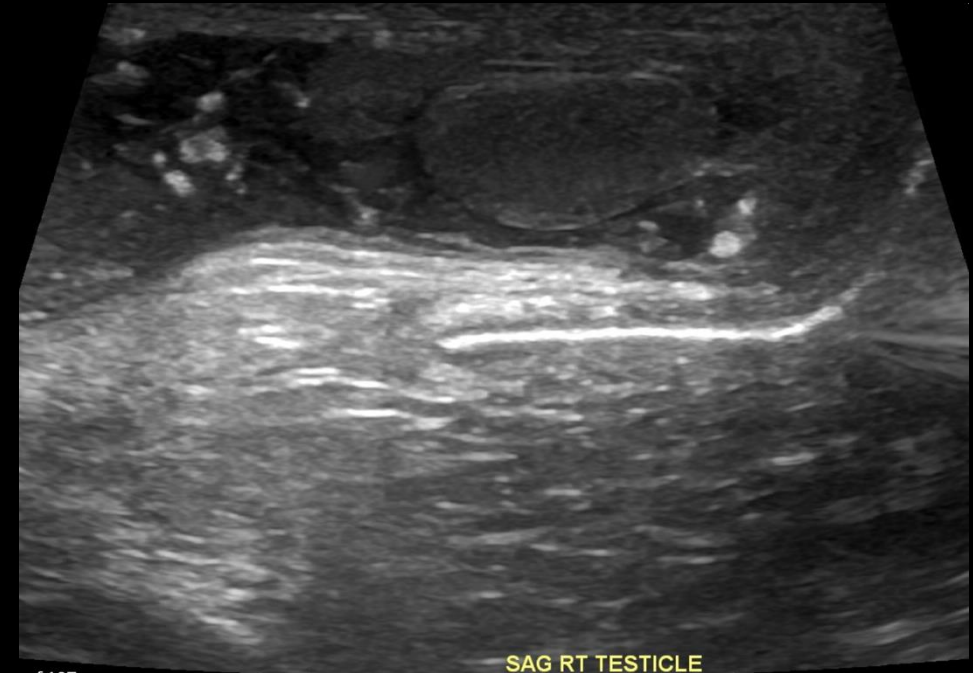
Arrows point to calcifications throughout the liver which may reflect peritoneal surface or subcapsular calcifications.

US Scrotum - Findings (unlabeled)

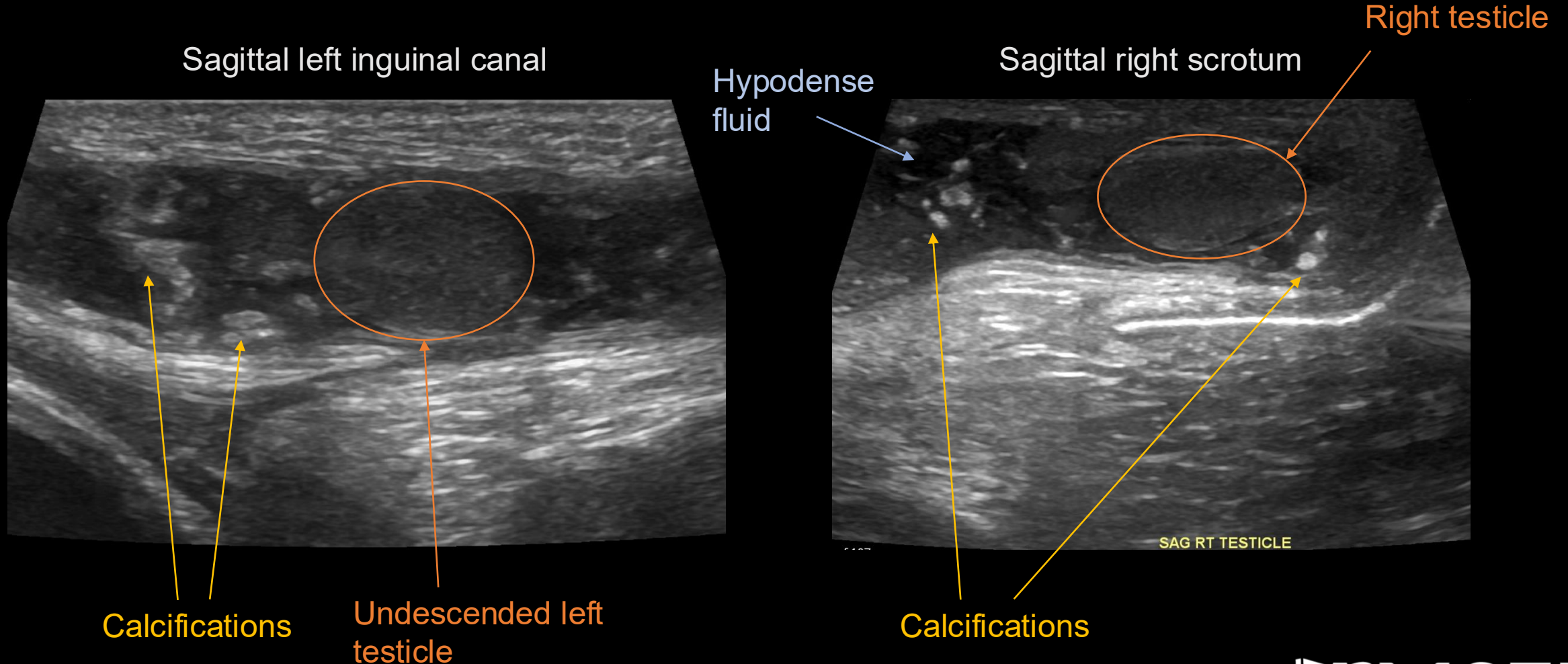
Sagittal left inguinal canal



Sagittal right scrotum



US Scrotum - Findings (labeled)



FINAL DX:

MECONIUM PERITONITIS COMPLICATED BY MECONIUM
PERIORCHITIS

Case Discussion

- **Epidemiology:** Estimated prevalence is at ~1 in 35,000.¹
- **Pathophysiology:** Meconium peritonitis is a sterile chemical inflammatory response to leakage of fetal meconium into the fetal peritoneal cavity.²
- **Etiology/Risk Factors:**
 - Often caused by in utero bowel perforation due to obstruction (ie. atresia, meconium ileus).^{2,3}
 - Isolated calcifications without obstruction may be caused by temporary reduced blood flow to a part of the bowel, resulting in a small hole.²
 - Commonly associated with cystic fibrosis.⁴

Case Discussion

- **Presentation and Common Findings:**

- Can be visualized on prenatal ultrasound after 18 weeks gestation.⁴
- Newborn commonly presents with abdominal distension.⁵
- Radiograph: peritoneal calcifications, meconium pseudocyst, or if patent processus vaginalis is present, calcifications in the scrotum.²
- US: highly echogenic linear or clumped foci (calcifications) in peritoneal distribution, snowstorm appearance, fetal ascites, polyhydramnios, intestinal anomalies, or dilated abdomen.^{4,6}

- **Classification^{3,7}:**

- Type I: large meconium ascites
- Type II: large pseudocyst
- Type III: Intra-abdominal calcifications, small meconium ascites and/or a shrinking pseudocyst

Case Discussion

- **Prognosis and Treatment:**

- Isolated calcifications, passing meconium normally
 - Usually resolves spontaneously in utero
 - Conservative management
 - Excellent prognosis, 100% survival⁸
- Bowel obstruction suspected
 - Surgical intervention usually required – may include multiple drainage procedures, stoma creation, and final ostomy closure³
 - Favorable prognosis, >85% survival^{5,8,9}
 - Common indications for surgery: meconium pseudocysts, bowel dilation, and ascites⁸

- **Meconium Periorchitis**

- Complication of meconium peritonitis.
- Presence of a patent processus vaginalis allows meconium to pass into the scrotum.
- Initially presents as a hydrocele that gradually hardens as the meconium calcifies.¹⁰

Case Conclusion

This patient had a type III meconium peritonitis without intestinal abnormalities, so no treatment was required.

This was complicated by meconium periorchitis due to a patent processus vaginalis. No immediate treatment was necessary. Future surgical consultation was planned for the hydrocele and left undescended testicle.

References

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