

# Benign infantile hemangioma presenting as solid testicular mass

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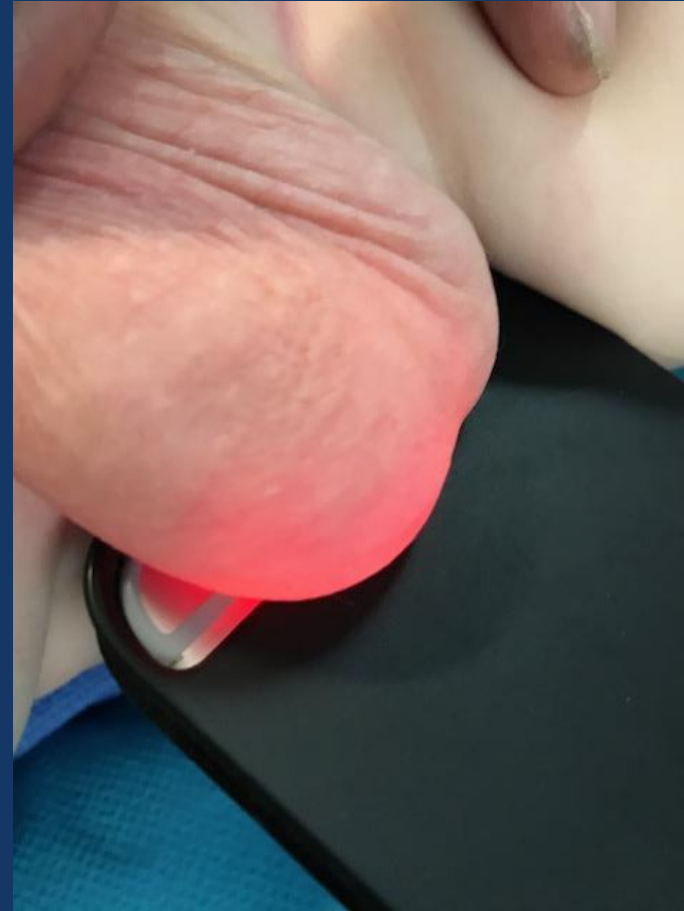
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# History of present illness

- 3-month old boy presented with right scrotal swelling, concern for right hydrocele
- Examination: enlarged and firm right testicle concerning for solid mass
- Exam otherwise benign without signs of lymphadenopathy or intra-abdominal mass.

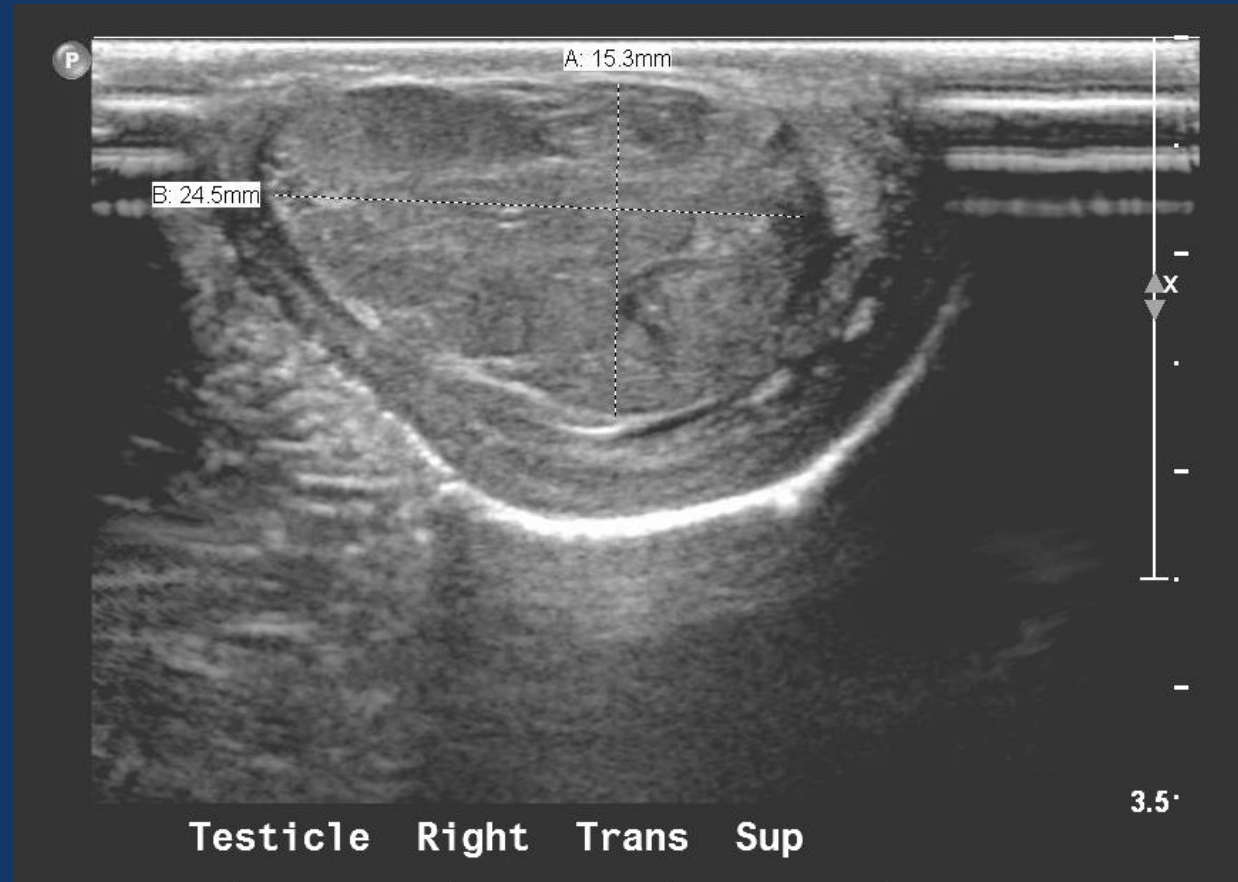
# History of present illness



# Laboratory and imaging evaluation

- Scrotal ultrasound: 4 cm exophytic right testicular mass with extension into spermatic cord with satellite lesions in right testicle
- Serum tumor markers: within normal limits (AFP and hCG)
- CT scan of the chest, abdomen, and pelvis: no metastatic disease
- Overall concern for malignant process

# Laboratory and imaging evaluation

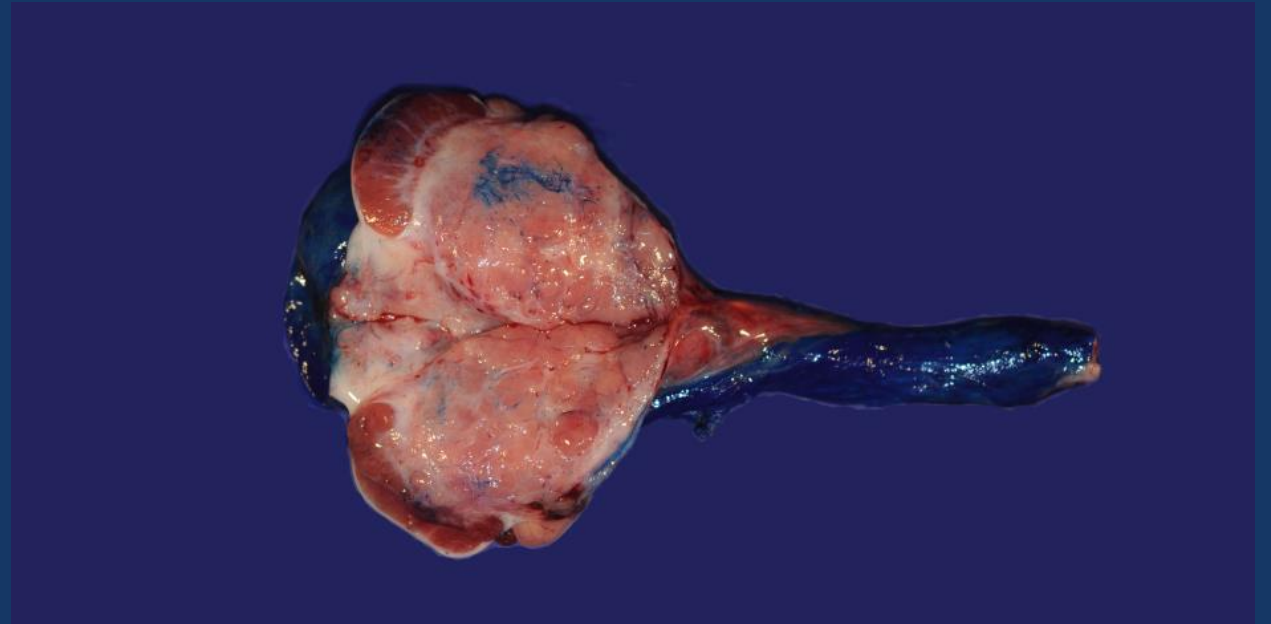


# Management

- Parents counseled for child to undergo right radical orchiectomy

# Pathology

- Grossly the specimen was a pink/lobulated mass displacing the testicle inferiorly



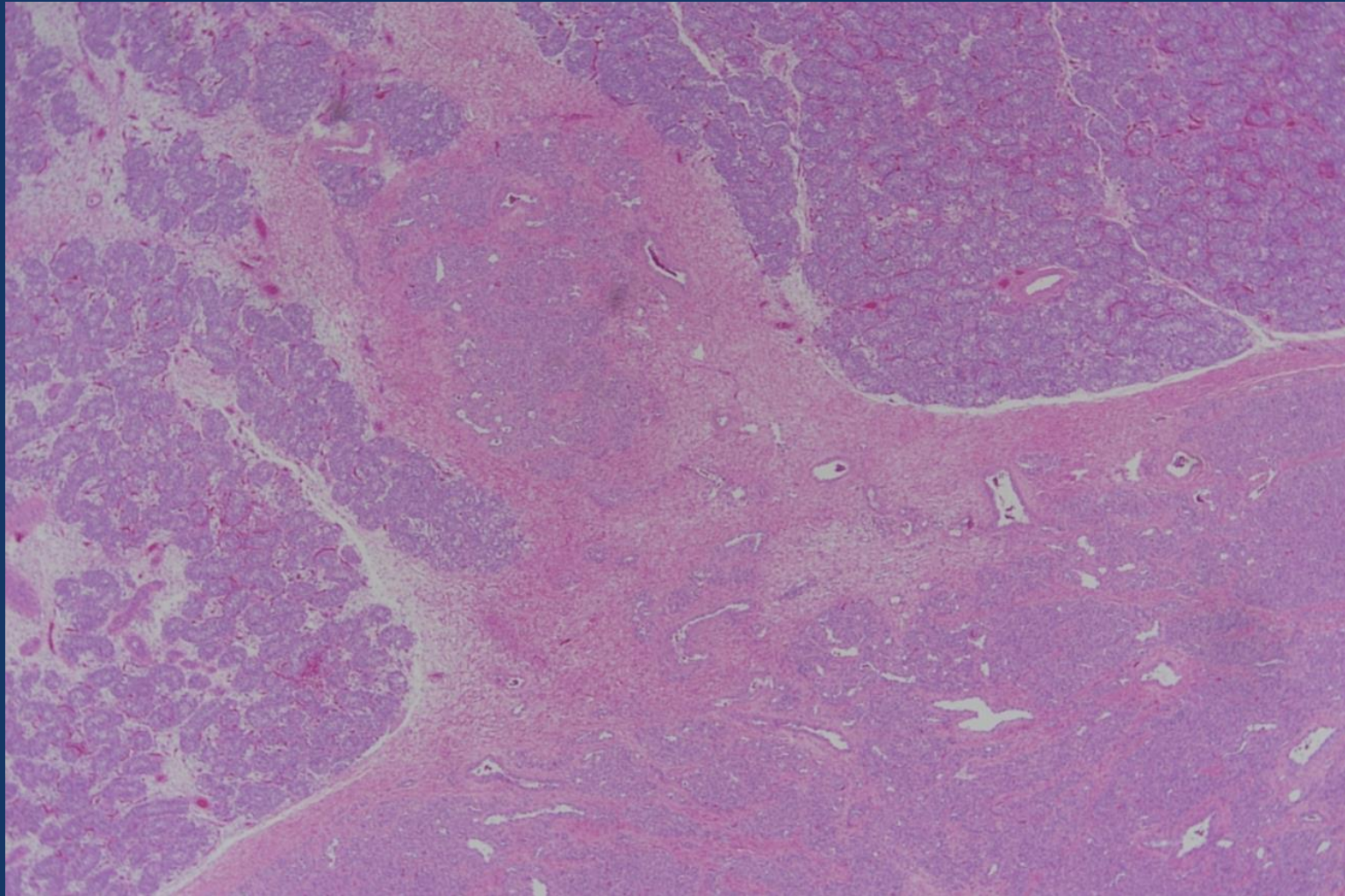


# Pathology

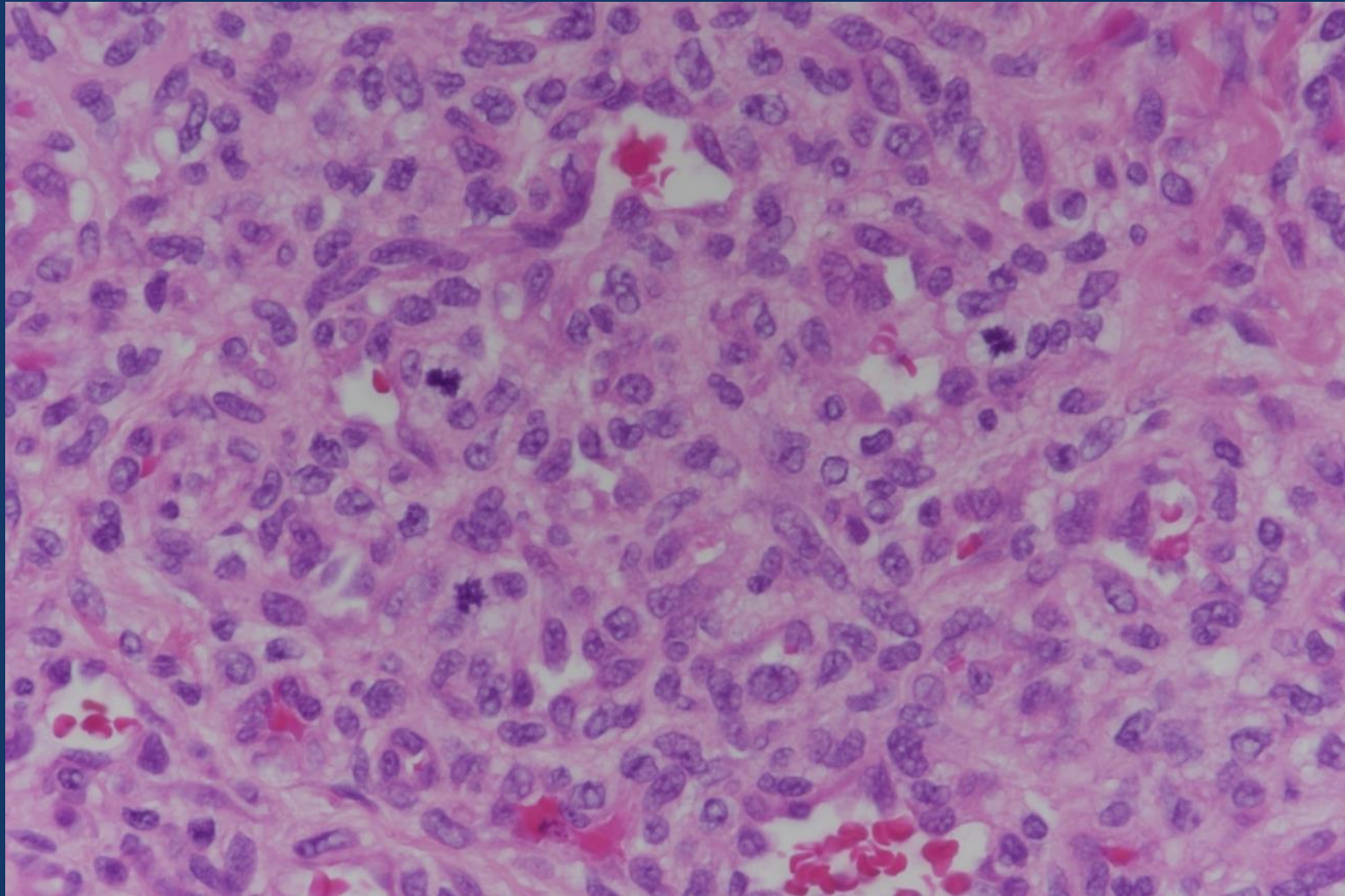
- Microscopically mass appeared to be arising from tunica albuginea and visceral tunica vaginalis with focal extension into distal spermatic cord and testicular parenchyma noted
- Cells formed numerous capillary beds
- Immunohistochemistry staining was negative for germ cell and sex-cord stromal markers (AFP, PLAP, cytokeratin 7 and AE1/AE3, CD30, CD117, inhibin), positive for CD31 and GLUT-1



# Pathology



# Pathology





# Final diagnosis

- Benign infantile hemangioma

# Testicular infantile hemangioma

- Rare, benign vascular neoplasm
- Subtypes
  - Cavernous
  - Capillary
  - Cellular capillary
  - Epithelioid
  - Juvenile

# Testicular infantile hemangioma

- No well established pre-disposing risk factor
- Infant presentation of testicular hemangioma especially rare
- Two major case series: Kryvenko et al. (2013) and Hugar et al. (2018)
  - 18 cases reviewed between 1992 - 2013
  - 2 of 18 cases in age < 1 year
  - Essentially all treated with radical orchiectomy

Kryvenko O, Epstein J. Testicular hemangioma: a series of 8 cases. Am J Surg Pathol. 2013;37:860-866.

Hugar SB et al. Pediatric Testicular Hemangioma in a 10-Year-old: A Rare Entity That May Mimic Malignancy With Appraisal of the Literature. Urology. 2018 Apr;114:175-180.

# Testicular infantile hemangioma

- Scrotal US: echogenic, hypervascular lesion
- Markers: negative AFP/hCG
- Pathology: variable immunohistochemical analysis, typically CD31 positive (vascular endothelial marker)
  - May invade
  - Misdiagnosis possible: angiosarcoma, Leydig cell tumor, regressed germ cell tumor

Kryvenko O, Epstein J. Testicular hemangioma: a series of 8 cases. Am J Surg Pathol. 2013;37:860-866.

# Testicular infantile hemangioma

- Natural history: spontaneous involution
- Management
  - Typically radical orchiectomy given concern for underlying malignancy
  - Partial orchiectomy if technically feasible
- No formal guidelines for follow-up; no known association with hemangiomas at other sites

Kryvenko O, Epstein J. Testicular hemangioma: a series of 8 cases. Am J Surg Pathol. 2013;37:860-866.



# Testicular infantile hemangioma

- Contrast-enhanced US (CEUS)/strain elastography may be useful in diagnosis
- Bernardo et al.: testicular hemangioma in 66 M
  - Early/avid uptake of contrast on CEUS
  - Strain elastography consistent with soft tissue mass (similar pattern to liver/spleen hemangioma)
- No reported use in testicular infantile hemangioma

Bernardo S, et al. Multiparametric sonographic imaging of a capillary hemangioma of the testis: appearances on gray-scale, color Doppler, contrast-enhanced ultrasound and strain elastography. J Ultrasound. 2015 Nov 27;19(1):35-9

# Summary

- Infantile testicular hemangioma: rare testicular neoplasm
- Benign lesion that may invade testicle/cord
- Difficult to differentiate from malignancy on imaging; CEUS may be useful
- Treatment: enucleation if possible; intra-operative frozen section may be helpful for clinically equivocal cases with experienced genitourinary pathologists

Thank you