From Gynecomastia to Unexpected Testicular Mass: Clinical Journey of a Young Male with a Mixed Germ Cell Tumor

Anusri Yanumula, MD[1]; Jenna Capuano, DO, FACS[2]
[1]Naval Medical Center Camp Lejeune, [2]Naval Medical Center Portsmouth

Case Presentation

- 20yo M referred to Breast Surgery Clinic for gynecomastia.
- Reports enlarged bilateral breasts after 80lb weight loss. Denies breast pain, masses, skin changes, and nipple discharge. Denies medication and substance use. After abnormal scrotal exam patient eventually admits left scrotal enlargement for three months. Further denies fevers/chills, scrotal pain, urinary symptoms, recent trauma, family history of testicular cancer, history of sexually transmitted infections.
- Physical exam: asymmetric enlargement of left scrotum and testicle measuring 8 cm in diameter. Non tender bilateral testicles or scrotum. Epididymis not enlarged. No exam evidence of inguinal hernia. No inguinal adenopathy. Bilateral, non tender, subareolar glandular tissue.
- Urgent scrotal ultrasound and serum tumor markers ordered. Patient evaluated by Urology immediately after ultrasound
- Patient underwent a left radical orchiectomy and was diagnosed with Stage 1B mixed non-seminomatous germ cell tumor (20% teratoma, 80% yolk sac), pathologic T2 due to lymphovascular invasion. He was a candidate for BEP (bleomycin, etoposide, cisplatin) chemotherapy and now is under surveillance following NCCN guidelines [1].

References and Acknowledgements
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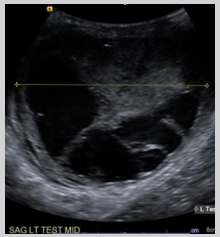
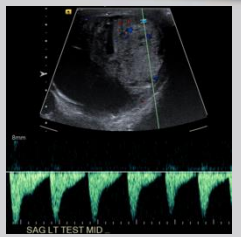
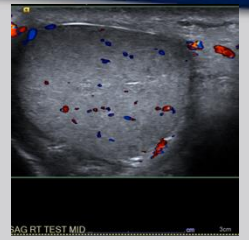
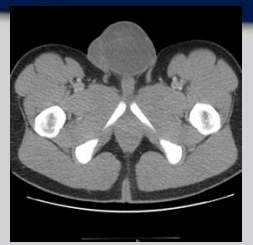
Investigations

Figures 1-4. Heterogenous cystic and solid mass measuring at least 7.7 x 5.6 x 8.3cm within the left testicle (fig. 1). Internal arterial and venous waveforms are identified within the solid portion of the mass (fig. 2). The right testicle is normal in size, morphology, and echotexture, measuring 3.5 x 2.4 x 3.3cm (fig. 3). Partially visualized large mixed cystic and solid left testicular mass, measuring up to 8.2 x 7.8cm (fig. 4).

Treatment and Outcome

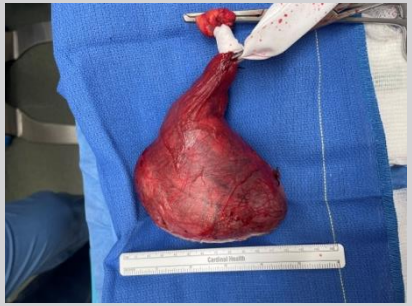
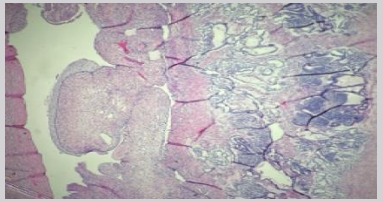


Figure 5. Left testicle and spermatic cord post-orchiectomy. Measuring 8.5cm x 6.5cm x 5.1 cm.



Tumor markers	Pre-resection	Post-resection
LDH	151 U/L	265 U/L
Beta HCG	<2.42 mIU/mL	<1 mIU/mL
AFP	172 ng/mL	2.7 ng/mL

Table 1. Tumor markers LDH, HCG, AFP change pre-orchiectomy to post-orchiectomy

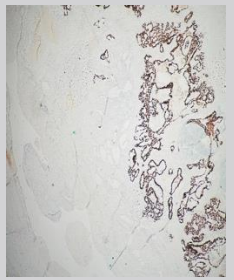


Figure 6 (left). H&E image at 4X magnification showing a mixed germ cell tumor with teratoma and yolk sac components.
Figure 7 (right). Pan-keratin (AE1/AE3) highlighting both yolk sac component and epithelial portions of teratoma component

Learning Objectives

- Clinical presentation can vary which makes diagnosis challenging.
  - AAFP recommends a routine testicular examination for any patient needing a breast evaluation for gynecomastia and further testicular ultrasound for those with palpable testicular masses, gynecomastia >5cm, or otherwise unexplained gynecomastia [2].
  - Standard physical exam for gynecomastia includes testicular evaluation in the primary care setting before referral to specialists.
- Early detection of testicular cancer is crucial
  - Between 1973 and 2014, the percentage of testicular tumors diagnosed at a localized stage increased from 55% to 68% in the US [3].
- Prompt Urology referral is important to guide staging, surgical planning, and surveillance
  - Testicular cancer detected at Stage I has a 5-year survival rate exceeding 95% [4].
  - No screening guidelines are recommended according to American Urological Association; however, urgent Urology referral to be evaluated within 1 -2 weeks is recommended for suspicious cases [5].
  - Scrotal ultrasound and serum tumor markers can be ordered concurrently with urology referral.