



## Testicular mixed germ cell tumor in a transgender woman

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### ABSTRACT

Transgender women who have not undergone orchiectomy remain at risk for the development of testicular cancer. Unfortunately, many physicians self-report a weak fund of knowledge around transgender health issues and some are uncomfortable performing proper exams or advising patients on self-exams. Here we report the first case of a testicular mixed germ cell tumor that developed in a transgender woman and discuss the salient points of caring for transgender patients.

### 1. Introduction

Recent studies have estimated around 1 million Americans that identify as transgender, and this number continues to rise. Many transgender patients retain their natal anatomy which poses a unique set of challenges for providers. Transgender women who have not undergone orchiectomy remain at risk for developing testicular cancer, but reports of such cancer in the literature are sparse. Here we report the first case of a testicular mixed germ cell tumor that developed in a transgender woman receiving hormonal therapy.

### 2. Case presentation

A 26 year old transgender woman (assigned male at birth) was referred to our hospital to establish care with our Transgender Health Program. Her past medical history was notable for depression, agoraphobia, and longstanding gender dysphoria. After a year of hormonal therapy the patient reported new left scrotal discomfort. A scrotal US was obtained, which showed a 2.5 × 2.5 × 2.1cm hyperemic heterogeneous mixed solid cystic mass in the left testicle, concerning for malignancy (Fig. 1). The patient was planning on undergoing bilateral orchiectomy for gender affirmation purposes but this was expedited due to the discovery of the testicular mass. A radical orchiectomy was performed on the left side, with an a simple inguinal approach on the right for symmetry.

Pathology revealed a mixed germ cell tumor (70% classic seminoma, 15% embryonal carcinoma, 15% yolk sac tumor), germ cell neoplasia in situ, pT2 due to LVI (Figs. 2 and 3). Her right testicle had no evidence of tumor or germ cell neoplasia in situ. Staging workup showed no

evidence of retroperitoneal lymphadenopathy or metastatic disease and the patient was placed on surveillance.

### 3. Discussion

The AUA Guidelines for testicular cancer recommend evaluation of a testicular mass with US and tumor markers (AFP, b-HCG, and LDH). Once a solid mass in the testis is identified it should be managed as a malignant neoplasm until proven otherwise. The standard of care includes treatment with a radical inguinal orchiectomy, staging scans of the chest, abdomen, and pelvis, and monitoring of tumor markers. It is important that patients receive prompt evaluation and treatment for newly diagnosed testicular masses, but factors stemming from either the provider or the patient may inadvertently lead to delays in treatment for the transgender population.

With respect to providers, many physicians self-report a weak fund of knowledge around transgender health issues. Further, those with less exposure to transgender patients have reported lesser levels of comfort with discussion of gender identity and counseling on gender confirmation based surgery. Transgender patients themselves may suffer from anatomic dysphoria, leading to discomfort with physical exams or sometimes even reluctance to acknowledge their own genitals.<sup>1</sup> In some cases transgender patients may confuse expected changes that are the result of hormone replacement therapy with unexpected changes that warrant further evaluation. Wolf-Gould et al. reported such a case where the diagnosis of testicular cancer was delayed because the patient interpreted a testicular mass as part of the expected changes associated with testicular atrophy from hormonal therapy (ibid). Discomfort associated with testicular atrophy can also lead to patient or clinician

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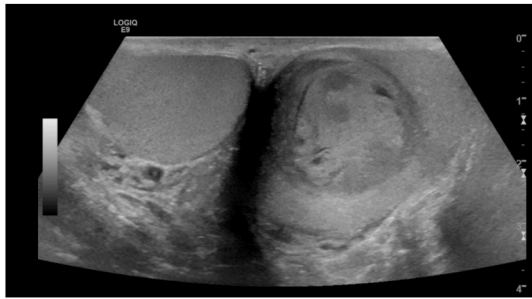


Fig. 1. Scrotal US.



Fig. 2. Left testicle and spermatic cord, gross specimen.

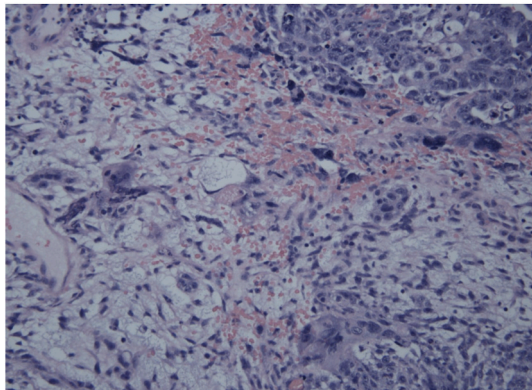


Fig. 3. Mixed germ cell tumor (70% classic seminoma, 15% embryonal carcinoma, 15% yolk sac tumor), microscopic specimen.

confusion during hormone ablative therapy.

Currently the USPSTF recommends against routine testicular cancer screening in cisgender men and there are no guidelines that support routine screening in transgender women. Still, because transgender women may be at risk of delayed diagnosis it is prudent for providers to perform a thorough physical examination, including a testicular examination. Sensitive and well informed clinicians who develop strong rapport with transgender patients may therefore be in a unique position to aid in the timely diagnosis of testicular cancer in this population.

The literature on testicular cancer in transgender women is sparse.

Elshimy et al. reported a case of a 31 year old transgender woman who was found to have a beta-HCG secreting seminoma because her total testosterone level failed to suppress.<sup>2</sup> Similarly, Wolf-Gould et al. reported the case of a 28 year old transgender woman who developed rising testosterone and estradiol levels while on feminizing hormones and was found to have an intratubular germ cell neoplasia (carcinoma in situ), embryonal cell carcinoma.<sup>1</sup> Kobori et al. reported on a 30 year old transgender woman who developed a mature testicular teratoma with positive estrogen receptor beta expression while receiving cross-sex hormonal therapy with estradiol and progesterone.<sup>3</sup> Finally, Kvach et al. reported on a 30 year old transgender woman who underwent penile inversion vaginoplasty and was found to have a seminoma.<sup>4</sup> To the best of our knowledge this is the first case reported of a mixed germ cell tumor in a transgender woman.

Transgender patients should receive care at institutions capable of providing a multi-disciplinary approach.<sup>5</sup> Our Transgender Health Program has a robust support system for dealing with gender identity issues. The above patient initially met with internists and reproductive endocrinologist who fine tuned her hormonal treatment to achieve the desired outcome with minimal side effects. She met with a speech-language pathologist for voice feminization services, a social worker for assistance with legal name change, and a psychotherapist for mental health counseling. When her testicular mass was discovered referrals to urology and GU oncology were prompt and all necessary records were readily available. This type of collaborative network allows transgender patients access to providers that are sensitive to their needs, which can help avoid unnecessary delays in care.

#### 4. Conclusion

Transgender women who have not undergone orchiectomy remain at risk for the development of testicular cancer. There is a paucity of such cases reported in the literature, but we suspect that the number will continue to rise as the number of people pursuing gender affirmation surgery increases. Providers should be aware of the unique needs of the transgender population to ensure the delivery of quality healthcare for this group of patients.

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#### Declaration of competing interest

The authors have no financial disclosures or conflicts of interest.

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