Polyorchidism and Dermoid cyst

George N Ateek III, MD, Fernanda Cordeiro-Rudinsky, MD
Department of Pathology, Immunology and Laboratory Medicine, University of Florida College of Medicine, Gainesville, FL.

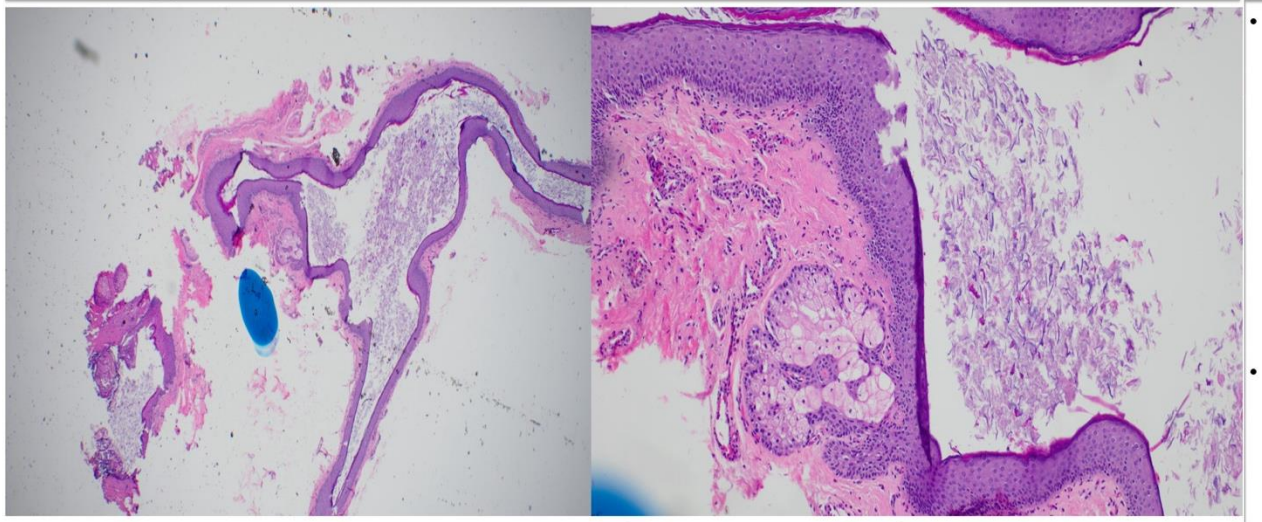
Introduction

- Dermoid cysts are thought to arise from invagination and entrapment of ectodermal elements along the embryonic lines of fusion, and then migration into deeper areas.
- They are mainly located at midline or along the lines of embryonic closure, more commonly in locations such as face, neck and scalp. Other somewhat common sites are the central nervous system (especially at the cerebellopontine angle), ovary and omentum.
- Microscopically, they are uniloculated cysts lined by keratinizing squamous epithelium with attached skin appendages (such as eccrine glands, hair follicles or sebaceous glands), and may contain keratin debris within the cavity.
- Here we have a rare case of a paratesticular dermoid cyst diagnosed in a unique clinical scenario.

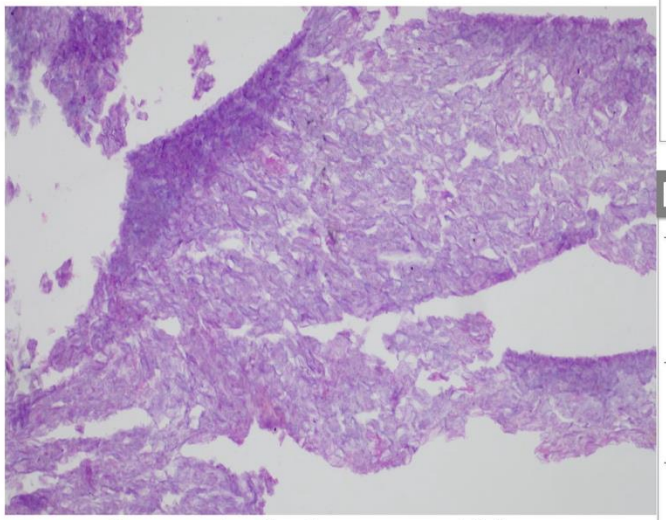
Case presentation

- A 17-year-old Caucasian male presented to the hospital with testicular pain, vomiting and diarrhea. The patient was known to the urology service after being diagnosed with polyorchidism seven years ago, when a scrotal ultrasound demonstrated five testicles of various sizes. Physical examination showed hydrocele and right testicular tenderness. Scrotal ultrasound was performed and revealed the midline testis to be enlarged (8.8 cm), heterogeneous, and with no significant blood flow identified on Doppler, which was found to be consistent with torsion. Two unremarkable testicles and a possible smaller irregular hypoechoic testicle below the midline testicle were identified. The fifth testicle previously seen at the level of the perineum was not demonstrated.
- Scrotal exploration revealed a torsed right testicle, normal left testicle and a presumed necrotic supernumerary midline testicle. A portion of the midline testicle was submitted for frozen section and was read as “Dead tissue, possibly anucleated squamous cells”. The right testicle was de-torsed and underwent orchiopexy, while the midline testicle was excised and sent for pathology as supernumerary testis.
- Gross examination revealed a 9.5 x 7.0 x 1.6 cm ovoid cyst, filled with friable material, with an attached cord-like structure. No testicular parenchyma was identified grossly. The cord-like structure was also filled with the previously mentioned friable material, with no identifiable blood vessels or vas deferens. Microscopic examination showed a dermoid cyst. After exhaustive sampling of the specimen, no testicular parenchyma was identified, and a diagnosis of paratesticular dermoid cyst was rendered.

Histology



Dermoid cyst with sebaceous glands (low and high magnification).



Frozen section showing squamous debris

Conclusions

- Paratesticular dermoid cysts are rare, and it is crucial to rule out the possibility of a dermoid cyst of the testis, which is now regarded as a subtype of prepubertal-type teratoma. In our case, the tissue was extensively sampled, and no testicular parenchyma was present, making the diagnosis of teratoma implausible. To our knowledge, only four cases of dermoid cysts of the paratestis have been published as case reports in the literature, and two of these scenarios were found in conjunction with supernumerary testis. They can present as supernumerary testis due to similar ultrasonographic features. Given that dermoid cysts lack blood flow on Doppler imaging, they can be misdiagnosed as torsed testis.
- Although the diagnosis of dermoid cysts is normally straightforward in usual anatomic sites, in the clinical scenario of a scrotal mass, the diagnosis is somewhat challenging. Especially in the clinical setting of supernumerary testicles. It is mandatory to perform a careful gross examination and sample the specimen thoroughly in order to rule out a testicular teratoma, before rendering a diagnosis of a paratesticular dermoid cyst. Also clinically, paratesticular cysts should be in the differential diagnosis in the setting of supernumerary testicles, when the imaging is not definitive for a testicle and Doppler study demonstrates lack of blood flow.

References

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