

Case Based Urology Learning Program

Resident's Corner: *UROLOGY*

Case Number 11

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A 26-year-old-male presents with a 1-year history of infertility. His healthy wife is 26-years-old, has normal 28-day menstrual cycles, and has never been pregnant. The patient states that his ejaculate volume has consisted of only a few drops of semen for as long as he can remember. He has a normal libido and denies erectile dysfunction.

What other history is particularly relevant?

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The patient denies any prior evaluation for this problem, which falls under the category of infertility associated with low volume ejaculate. He denies having any urinary difficulties. He denies STD or GU infection. His past medical/surgical/social/family history are completely negative. He does not take any medications and has never used steroids.

What physical examination findings
are particularly relevant?

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General appearance: Well-nourished and well developed male, appears healthy

Chest: No gynecomastia

Tanner stage: 5

Groin exam: No hernia, no incisions

Testicular exam: Bilaterally descended testicles, 20cc bilaterally, no masses

Vas deferens: Easily palpable bilaterally

Epididymis: Fullness to tail of the epididymis bilaterally

No varicocele

DRE: Small gland 15cc. Midline mass. Nontender to palpation.

What is the differential diagnosis for infertility associated with a low volume ejaculate?

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Ejaculatory duct obstruction

Retrograde ejaculation

Anejaculation

Urethral stricture disease

Incomplete collection of semen specimen

Low testosterone

Vasal agenesis

What diagnostic testing should be considered?

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Semen analysis x 2

Volume	0.1 (2 – 5 mL)
pH	6.8 (7.2 – 7.8)
Concentration	0
Motility	0
Morphology	0
Round cells	0
WBC	0

Post ejaculatory urinalysis

No sperm seen

Seminal fructose

Negative

What diagnostic testing should be considered?

Transrectal US (TRUS)

Prostate with midline cystic structure 10 mm in diameter

Dilated ejaculatory ducts 5 mm (>2-3mm is abnormal)

No ejaculatory duct calcifications

Dilated seminal vesicles (SV) 20mm (>15mm is abnormal)

Cystoscopy

Office flexible cystoscopy reveals a prominent dilated cystic mass on the veru montanum.

There is no urethral stricture, prostatic enlargement, bladder neck abnormalities, or bladder pathology.

Endocrine Testing

Testosterone 550 (220 – 1000 ng/dL)

FSH 2.1 (1 – 10 mU/mL)

What is the likely diagnosis?

What is the likely diagnosis?

Ejaculatory duct obstruction (EDO), with this being a classic presentation.

The main findings of EDO include azoospermia or severe oligospermia, very low ejaculate volume, low pH and fructose indicating lack of fluid from the seminal vesicles, dilated SVs and ejaculatory duct on TRUS, and cystic mass near the verumontanum on cystoscopy.

The lack sperm in the post-ejaculate UA also excludes retrograde ejaculation.

How should this patient be managed?

How should this patient be managed?

This patient should undergo a transurethral resection of the ejaculatory duct (TURED).

TURED is the standard treatment for men with EDO. Treatment indications include infertility and symptomatic EDO. Approximately 2/3 of patients will have improvements in semen quality after TURED. Post procedural pregnancy rates are between 20 – 30%. Unfortunately, 10 – 15% of men with low volume azoospermia will have normal volume azoospermia after the procedure, which may be due to a secondary obstruction upstream in the epididymis. 4% of men with partial EDO may become azoospermic after TURED from scarring.

How common is EDO and
what causes it?

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EDO is the underlying cause of infertility in up to 5% of males.

Although many patients with EDO are asymptomatic, some patients can complain of coital discomfort, dyspareunia, and recurrent hematospermia. Patients can present with low volume azoospermia or oligoasthenozoospermia with partial EDO. Congenital causes include Mullerian (utricular) or Wolffian (diverticular) duct cysts and congenital atresia of the ducts. Acquired causes include SV calculi and postsurgical or postinflammatory scarring.

What is the role of TRUS and SV
aspiration in the evaluation of EDO?

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TRUS should be routinely performed for the evaluation of patients suspected of having EDO. Not all patients with EDO will have dilated SVs and not all dilated SVs point towards EDO. SV aspiration during TRUS can also be performed, and can be very helpful. Greater than 3 sperm per high powered field is considered positive and diagnostic for obstruction. Obstruction of the ejaculatory duct allows for reflux of sperm into the SVs, which is not found under normal circumstances.

Selected Reading

Smith JF, Walsh TJ, Turek PJ. Ejaculatory duct obstruction. *Urol Clin N Am* 2008;35:221-7.

Fisch H, Lambert SM, Goluboff ET. Management of ejaculatory duct obstruction: etiology, diagnosis, and treatment. *World J Urol* 2006;24:604-10.

Topic:

Male Fertility/Benign Testis

Subtopics:

Low Volume Azoospermia, Ejaculatory Duct
Obstruction