

Male Infertility: Review Questions

Jonathan Mobley, MD

Stanley Zaslau, MD

QUESTIONS

Choose the single best answer for each question.

- 1. A 37-year-old man is referred for an infertility work-up. He and his 35-year-old wife have attempted to conceive for the past 9 months. The couple has not used contraceptive methods during this interval. The patient describes normal sexual practices with frequency approximately every other to every third day. He has no significant medical, surgical, family, or social issues. He takes no medications and does not use alcohol, tobacco, or illicit drugs. Physical examination reveals a well developed and nourished man with average build. His genitourinary examination reveals normal virilization, a circumcised phallus, a urethral meatus located at the tip of the glans, bilateral descended testicles with no palpable masses, bilateral palpable vas deferens, and a nontender prostate with normal size and consistency. Semen analysis reveals normal pH, sperm concentration, total number, motility, morphology, and viability. The volume was 1.4 mL. What is the next step in this couple's management?**

 - Watchful waiting until 1 year of failed fertilization
 - Repeat semen analysis
 - Postejaculatory urinalysis
 - Serum follicle-stimulating hormone (FSH), luteinizing hormone (LH), and testosterone
 - Scrotal ultrasound
- 2. A 35-year-old man is referred to a urologist for azoospermia. Physical examination reveals bilateral descended testes with normal testicular volume. The vas deferens are absent bilaterally. What is the next step in this patient's management?**

 - Karyotyping
 - Testing for Y chromosome microdeletions
 - Testing for cystic fibrosis mutations
 - Scrotal ultrasound
 - Vasogram
- 3. What is the most common treatable cause of male infertility?**

 - Androgen deficiency
 - Cigarette smoking
 - Cryptorchidism
 - Ejaculatory duct obstruction
 - Varicocele
- 4. Which statement concerning testing for asthenospermia (ie, defects in sperm movement) is correct?**

 - Direct assays detect serum antisperm antibodies
 - Kallman's syndrome should be suspected in patients with immotile sperm, situs inversus, and recurrent upper respiratory tract infections
 - Patients with negative antisperm antibody assays should undergo serum prolactin levels
 - Round cells can be segregated into leukocytes and immature germ cells through peroxidase staining techniques
 - Vasography is performed by injecting contrast medium proximal and distal to the needle insertion site in the vas deferens

(turn page for answers)

Dr. Mobley is a senior resident, Section of Urology, West Virginia University, Morgantown, WV. Dr. Zaslau is a program director and assistant professor, Section of Urology, West Virginia University, Morgantown, WV.

ANSWERS AND EXPLANATIONS

- 1. (B) Repeat semen analysis.** Variability in semen analysis from the same patient can occur secondary to multiple factors, such as duration of abstinence and efficiency of collection. Due to this inconsistency, initial laboratory analysis should include at least 2 to 3 semen analyses. If low volume continues, then postejaculatory urinalysis should be performed to rule out retrograde ejaculation. Scrotal ultrasonography should not be used to screen infertile men but rather as a tool to assist in the diagnosis of testicular tumors or varicoceles. Endocrine disorders are responsible for fewer than 3% of cases of male infertility.¹ The current screening recommendations include a serum FSH and testosterone levels for men with suggestive history, physical examination, or sperm density less than 10 million/mL.² Further testing with repeat testosterone, LH, and prolactin levels are indicated with abnormalities in the initial serum FSH or testosterone levels. For couples in which the woman is approaching age 40 years, aggressive management should begin at the initial presentation.
- 2. (C) Testing for cystic fibrosis mutations.** Screening for the cystic fibrosis transmembrane conductance regulator (CFTR) gene should be performed on all men with congenital bilateral absence of the vas deferens (CBAVD). CBAVD is found in nearly all men with cystic fibrosis, and a large percentage of men with CBAVD carry the mutated CFTR gene. CBAVD is the most common cause of obstructive azoospermia.¹ CBAVD is diagnosed by physical examination and does not require a scrotal ultrasound or vasogram.
- 3. (E) Varicocele.** Varicoceles are the most common correctable cause of male infertility. The prevalence is 20% to 40% in infertile males.¹ Repair results in

improved seminal parameters in 70% of patients. Endocrine disorders account for fewer than 3% of cases of male infertility. Approximately 3% of cases of male infertility are attributable to cryptorchidism.¹ Ejaculatory duct obstruction is found in 7% to 12% of infertile males. Cigarette smoking has not been found to be associated with infertility in most studies.

- 4. (D) Round cells can be segregated into leukocytes and immature germ cells through peroxidase staining techniques.** Leukocytes and immature germ cells look similar under light microscopy. Several staining techniques have evolved to distinguish between the immature germ cells and leukocytes. Some studies have found higher rates of infertility in men with higher leukocytes in semen analysis. Direct assays measure antisperm antibodies on patient's sperm, whereas indirect assays measure serum antibodies. Kartagener's syndrome, not Kallmann's syndrome, refers to the triad of frequent respiratory tract infections, immotile cilia, and situs inversus. Kallmann's syndrome is hypogonadotropic hypogonadism associated with anosmia. Hormonal studies are not required for the evaluation of isolated asthenospermia. Vasography locates areas of obstruction. This is performed by opening the vas deferens and obtaining sperm. Next, the vas deferens is cannulated, and contrast medium is injected toward the bladder. Retrograde injection of contrast towards the testicle is not performed because of the risk of epididymitis.

REFERENCES

1. Walsh PC, Retik AB, Vaughn E, Wein A, editors. Campbell's urology. 8th ed. Philadelphia: Saunders; 2002:1484–512.
2. Sigman M, Jarow JP. Endocrine evaluation of infertile men. *Urology* 1997;50:659–64.

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