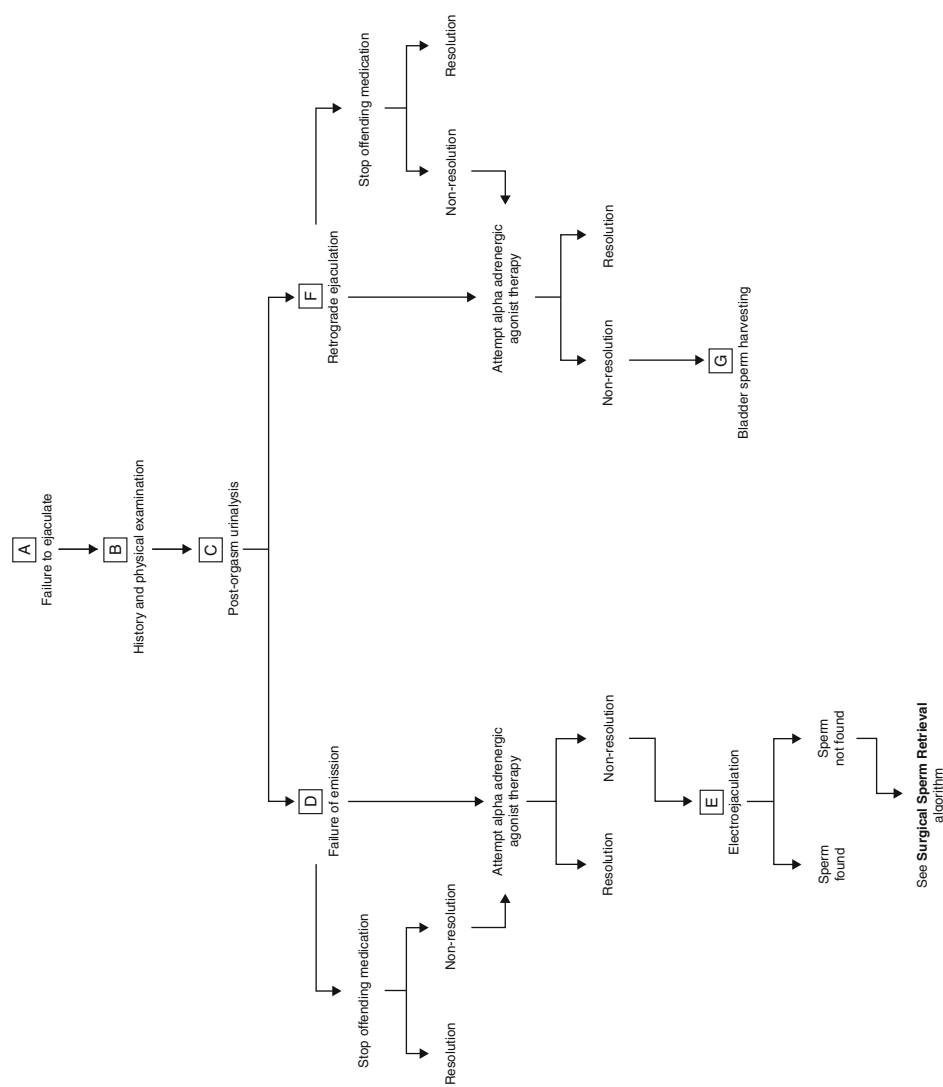


Chapter 2

Anejaculation



(A)

Anejaculation refers to the failure to ejaculate, a situation in which the patient is usually capable of achieving an orgasm. The absence of orgasm is anorgasmia, and difficulty achieving orgasm is termed delayed orgasm (see *Delayed Orgasm* algorithm). The lack of seminal fluid at the time of orgasm may be due to either retrograde ejaculation (RE) or failure of emission (FOE). RE in which seminal fluid travels into the urinary bladder is due to incompetence of the bladder neck. Thus, with orgasm, little or no seminal fluid is ejaculated. FOE, on the other hand, is the complete absence of seminal fluid deposition into the prostatic urethra. This results from greater impairment of the neural innervation of the seminal vesicles and the prostate. The causes can be subdivided into neurogenic (i.e., autonomic neuropathy or retroperitoneal surgery), medication (alpha-adrenergic blockers), and anatomic (bladder neck surgery or congenital) categories.

(B)

The history should first focus on why the patient is bothered by the anejaculation. It is important to distinguish whether the absence of antegrade ejaculate is relevant for fertility reasons or whether the patient is psychologically distressed. Men with psychological impairment typically report feeling less masculine or sexual due to the absence of antegrade ejaculation. The next step is identifying factors that may be causative for the anejaculation (Table 2.1). A thorough medical, surgical, sexual, and medication history is essential. Focusing on the onset of the failure to ejaculate and its relationship to medication commencement or dates of surgery may help in the diagnosis and thus the prognosis.

(C)

The essential test is a post-orgasm urinalysis (also known as a retrograde semen analysis) (Table 2.2). The presence of semen and/or sperm in the first urine collection after orgasm defines retrograde ejaculation, whereas its absence defines FOE. It is important that the patient have little urine in his bladder at the time of masturbation so that only a small volume of urine needs to be centrifuged to find a semen pellet. The patient should not be encouraged to overhydrate himself for this test.

(D)

FOE results from severe damage to the sympathetic pathways to the bladder neck and ejaculatory apparatus or may be due to the use of the alpha-blocker tamsulosin, which has been shown to cause FOE rather than RE. Discontinuing tamsulosin reverses the problem, provided there are no other causative factors. Alpha-adrenergic agonist medications (Table 2.3) have been shown to promote antegrade ejaculation and may be attempted, but are unlikely to be effective in the setting of neurogenic FOE.

(E)

In cases when alpha agonist therapy does not work, the patient will require electroejaculation (EEJ) if sperm are required for fertility reasons. This procedure has been used in for animal husbandry for decades but has been FDA approved in humans for fewer than 20 years. For this procedure, other than in spinal cord injured men, general anesthesia is required. The anesthesiologist should be reminded to avoid paralyzing agents. A catheter is used to drain the bladder of urine and then fill it with sperm-friendly transport medium. The use of betadine and standard surgical lubrication is to be avoided since they are toxic to sperm. The urethra should instead be lubricated with mineral oil and/or transport medium. The patient is then placed in the lateral decubitus or lithotomy position. Prior to EEJ, digital rectal examination and anoscopy should be performed to assess for anal lesions and the integrity of the anal mucosa. The probe is then placed in the rectum (Fig. 2.1) with the transmitting plates placed firmly against the anterior wall of the rectum. The probe is chosen based on patient age and anatomy (Fig. 2.2). Low level electrostimulation is applied and the current, voltage, and temperature of the probe are monitored continuously. Typical parameters are 20–25 V and 0.4 A. The probe temperature should be maintained below 37°. We stimulate in cycles of five stimulations, monitoring erectile rigidity continuously as this is a surrogate for the effectiveness of neural stimulation. Over 90% of men ejaculate with this procedure. The ejaculate is collected in a sterile container. After ejaculation, the patient is returned to the supine position after repeat anoscopy. The bladder is re-catheterized to collect the retrograde specimen. The retrograde specimen is placed in a separate sterile container. The specimens can be assessed immediately, using a table microscope in the operating room, for sperm presence and motility. The most common adverse event after EEJ is a urine infection and for this reason we treat the patient with short course of postoperative antibiotics.

(F)

Retrograde ejaculation can result from partial impairment of the sympathetic nerve fibers to the bladder neck/ejaculatory apparatus, certain medications, or surgery that renders the bladder neck incompetent (Table 2.1). The diagnosis is made on a post-orgasm urinalysis. If the patient has medication-induced RE, withdrawal of the medication is likely to resolve the problem. Neurogenic RE, most commonly secondary to diabetes mellitus or retroperitoneal lymph node dissection for testis cancer, is very amenable to the use of alpha-adrenergic agonist therapy (Table 2.3), with conversion to antegrade ejaculation in more than 50% of such patients. Unfortunately, the patients who have had prior bladder neck surgery cannot be converted to antegrade ejaculation.

(G)

In men for whom alpha agonist therapy does not work and for whom fertility is a concern, bladder sperm harvesting can be performed. In this process, a man urinates after orgasm and the sperm are retrieved from the urine and used for intrauterine insemination. Due to the acidic pH of urine (which is highly toxic to sperm), the urine needs to be alkalized prior to harvesting. We usually use oral sodium bicarbonate or potassium citrate for this purpose. Some authorities also attempt to sterilize the urine also through the use of pre-procedure antibiotics.

Table 2.1 Causes of anejaculation

Neurogenic	Diabetes
	Multiple sclerosis
	Retroperitoneal surgery
	Thoracic spinal surgery
	Any cause of autonomic neuropathy
Medication	Alpha-adrenergic blockers ^a
	Anti-psychotics ^b
Anatomic	Bladder neck Y-V plasty
	Transurethral resection of the prostate
	Transurethral bladder neck incision
	Pelvic radiation
	Radical pelvic surgery
	Proximal urethral stricture
	Congenital abnormalities ^c

^aTamsulosin, alfuzosin, silodosin, prazosin, doxazosin, terazosin

^bThioridazine, isocarboxazid, and phenelzine, fluphenazine, trifluoperazine, tranylcypromine

^cPosterior urethral valves, utricular cysts, exstrophy

Table 2.2 Patient instructions for post-orgasm urinalysis and bladder sperm harvesting

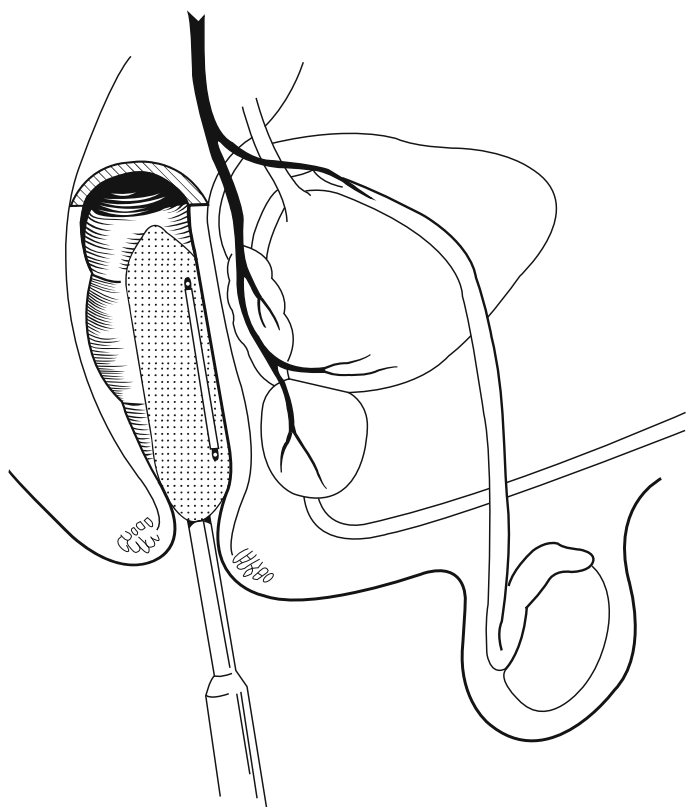
1. Select a sperm bank and make an appointment for the analysis. Tell them that you have retrograde ejaculation so they can tell you if they have any special instructions to follow before you come
2. Do not have sexual activity for 2 days, and ideally 4 days, before the appointment. This includes activity with a partner or self-stimulation
3. For 12 h before the appointment, do not drink more fluids than you normally would. If your urine is very watery, it is harder to extract the sperm
4. You will collect your semen at the sperm bank. If the sperm bank does not give you specific instructions on how to do this, follow these steps
 - (a) Go to the bathroom and urinate to empty your bladder.
 - (b) You will be given two cups for collection, labeled #1 and #2. You will be brought to a private room. You will stimulate to get sexually excited in order to ejaculate
 - (c) You can stimulate yourself or your partner can stimulate you. Your hands should be clean and dry. Do not use saliva or lubricants to stimulate yourself. These will destroy the sperm
 - (d) Hold collection cup #1 at the tip of your penis and collect any semen you have. Give this cup to the staff
 - (e) Return to the waiting area for 10–15 min. Do not drink any fluid during this time
 - (f) Go to the bathroom with the collection cup #2. Urinate into the cup. Give this cup to the staff

Retrograde ejaculation is when semen passes into the bladder instead of out through the penis during ejaculation. It occurs if the nerves and muscles that control ejaculation are damaged or removed. Despite this, it might be possible for you to have a child using your own sperm, by removing sperm from your urine. A sample of semen must be analyzed by a sperm bank, and the following instructions explain how to do this

Table 2.3 Alpha-adrenergic medications used for the treatment of anejaculation

Agent	Dosing
Pseudoephedrine	60 mg by mouth 4 times daily
Imipramine	25–50 mg daily
Midodrine	7.5–30 mg daily

Fig. 2.1 Electroejaculation probe placement



Unit



Probes

Fig. 2.2 Rectal probe electroejaculator (Seager)

Suggested Reading

- Kamischke A, Nieschlag E. Update on medical treatment of ejaculatory disorders. *Int J Androl*. 2002;25(6):333–44.
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- Rowland D, McMahon CG, Abdo C, Chen J, Jannini E, Waldinger MD, et al. Disorders of orgasm and ejaculation in men. *J Sex Med*. 2010;7(4 Pt 2):1668–86.

<http://www.springer.com/978-1-4614-6692-5>

Clinical Care Pathways in Andrology

Mulhall, J.P.; Stahl, P.J.; Stember, D.S.

2014, VIII, 188 p. 33 illus., 5 illus. in color., Hardcover

ISBN: 978-1-4614-6692-5