



European Association of Urology

**GUIDELINES  
ON  
DISORDERS OF  
EJACULATION**

**G.M. Colpi, W. Weidner**

# DEFINITION

Disorders of ejaculation are uncommon but important causes of infertility. Several heterogeneous dysfunctions belong to this group, and may be either of organic or functional origin.

Ejaculatory disorders correlated with distal seminal duct pathology are reported in chapter "Obstructive azoospermia".

# CLASSIFICATION AND ETIOLOGY

**Anejaculation** is the complete absence of an antegrade or retrograde ejaculation.

It is caused by a failure of emission of semen from the prostate and seminal ducts into the urethra. True anejaculation is usually associated with a normal orgasmic sensation. Sometimes, i.e. in incomplete spinal cord injuries, this sensation may be altered or decreased. However, anejaculation may be also due to anorgasmia, or inability to reach orgasm. This last condition is very often primitive; some patients report sporadic events of nocturnal emission or of ejaculation occurred during great emotional excitement unrelated to sexual activity. True anejaculation is always connected with central or peripheral nervous system dysfunctions or with drugs (table 1)

<b>Nerval</b>	<b>Drug-related</b>
Spinal cord injury	Antihypertensives
Cauda equina lesions	Antipsychotics
Retroperitoneal lymphadenectomy	Antidepressants
Aortoiliac surgery	Alcohol
Colorectal surgery	
Multiple sclerosis	
Parkinson's disease	
Autonomic neuropathy (juvenile diabetes)	

The causes of **anorgasmia** are usually psychological.

Delayed ejaculation is the condition where an abnormal stimulation of the erected penis is necessary to obtain an orgasm with ejaculation.

Delayed ejaculation may be considered a slight form of anorgasmia: both can be alternatively found in the same patient. The causes of delayed ejaculation may be either organic, e.g. by

- incomplete spinal cord lesion, iatrogenic penile nerve damage,
- pharmacological causes (Antidepressants, Antihypertensives, Antipsychotics) or psychological.

Retrograde ejaculation is the total absence of an antegrade ejaculation because semen passes backwards through the bladder neck into the bladder.

Patients experience a normal or decreased orgasmic sensation, except for paraplegia. Retrograde ejaculation is usually complete and rarely partial. Partial antegrade ejaculation must not be confused with the secretion of bulbo-urethral glands. The causes of retrograde ejaculation can be subdivided into:

- *Neurogenic*
  1. Spinal cord injury
  2. Cauda equina lesions
  3. Multiple sclerosis
  4. Autonomic neuropathy (juvenile diabetes)
  5. Retroperitoneal lymphadenectomy
  6. Sympathectomy
  7. Colorectal and anal surgery
- *Pharmacological*
  1. Antihypertensives
  2. Alpha1-adrenoceptor antagonist
  3. Antipsychotics
  4. Antidepressants
- *Bladder neck incompetence*
  1. Congenital defects of hemitrigone
  2. Congenital dysfunction of hemitrigone
  3. Bladder extrophy
  4. Bladder neck resection
  5. Prostatectomy
- *Urethral obstruction*
  1. Ectopic ureterocele
  2. Urethral stricture
  3. Urethral valves

**Asthenic ejaculation** also defined partial ejaculatory incompetence or “éjaculation baveuse” (Chapelle, 1982), is characterized by an altered propulsive phase with a normal emission phase.

In the neurogenic forms the orgasmic sensation is reduced and the typically rhythmical contractions associated with ejaculation are missing, while in asthenic ejaculation due to urethral obstruction, these contractions are present.

The most frequent causes are:

- *Neurogenic*
  1. Spinal cord injury (L1)
  2. Cauda equina lesions
  3. Multiple sclerosis
  4. Autonomic neuropathy (juvenile diabetes)
  5. Retroperitoneal lymphadenectomy
  6. Sympathectomy
  7. Colorectal surgery
- *Urethral obstruction*
  1. Ectopic ureterocele
  2. Urethral stricture
  3. Urethral valves

Asthenic ejaculation involves poor consequences for male fertility.

Premature ejaculation is the inability to control ejaculation for a “sufficient” length of time during vaginal penetration.

Although an universally-accepted meaning of “sufficient” length of time does not exist, some patients are not able to delay ejaculation over a few coital thrusts, or even after vaginal penetration. Premature ejaculation may be organic or psychogenic, primitive or acquired, partner-related or unselective, whether associated or not with erectile dysfunction.

Premature ejaculation does not involve any impairment of fertility, when intravaginal ejaculation occurs.

Painful ejaculation is a usually acquired condition, and causes sometimes moderate sexual dysfunction.

The painful sensation may be felt in the perineum, or urethra and urethral meatus.

Its causes can be:

- Ejaculatory duct obstruction
- Bacterial or abacterial prostatitis
- Urethritis, urethrocele
- Autonomic nerve dysfunction
- Psychological.

## DIAGNOSIS

Suggested diagnostic management includes:

Clinical history: diabetes, neuropathies, traumas, urogenital infections, previous surgery and drug assumption have to be carefully checked. Particular attention must be paid to the characters of micturition and ejaculation (presence of nocturnal emission, ejaculating ability in given circumstances, primitive or acquired disorder, evolution) as well as to the psychosexual sphere (education, features of affective relationship, pre-existent psychological traumas, previous psychological therapies).

Physical examination: genital apparatus and rectal examination with evaluation of the prostate, bulbocavernous reflex and anal sphincter tone. Minimal neurologic test including: sensitivity of scrotum, testes and perineum; cremasteric and abdominal cutaneous reflex; leg osteotendinous and plantar reflexes.

Glycemia

Post-ejaculatory urinalysis to assess partial retrograde ejaculation.

Cultural exams (initial and mid-stream urine, prostatic secretions and post-orgasmic urine)

Further diagnostic work-up includes:

- Neurophysiological tests (bulbocavernosus evoked response and dorsal nerve somatosensory evoked-potentials)
- Tests for autonomic neuropathies (i.e. appreciation of temperature regulation in the feet)
- Psychosexual evaluation
- Videocystometry
- Cystoscopy
- Transrectal ultrasonography
- Uroflowmetry
- Vibratory stimulation of the penis.

## TREATMENT

The treatment of infertility due to disorders of ejaculation is rarely etiological, and generally consist in retrieving spermatozoa to be used in medically assisted reproduction techniques.

In decision-making, the following aspects must be considered:

- Age of patient and of his partner
- Couple's willingness and acceptance of the different fertility procedures
- Psychological problems in the patient and his partner
- Associated pathologies

When the ejaculatory disorder is psychogenic and the couple's request is aimed at achieving pregnancy, they should above all undergo a preliminary psychological evaluation to avoid any severe subsequent psychological reaction induced by the pregnancy.

#### Etiological treatments

1. Interruption of pharmacological treatments interfering with the ejaculation (when possible)
2. Treatment of infectious forms
3. Psychotherapy
4. Surgical correction of the urethral pathology
5. Correction of metabolic disorders (diabetes)

#### Symptomatic treatments

##### Retrograde ejaculation

In the absence of spinal cord injury, anatomic anomalies of the urethra, or pharmacological treatments, an attempt to induce antegrade ejaculation must be made by drug treatment (table 2).

**Table 2: Drug treatment for therapy of retrograde ejaculation**

- Ephedrine sulfate, 10-15 mg 4 times a day
- Midodrin, 5 mg 3 times a day
- Brompheniramine maleate, 8 mg twice a day
- Imipramine, 25-75 mg three times a day
- Desipramine, 50 mg every second day
- or the patient can be suggested to ejaculate when his bladder is full, to increase bladder neck closure.

In case the drug treatment is not effective or not tolerable due to side-effects, or when the patient is spinal cord injured, or drug therapy inducing retrograde ejaculation cannot be interrupted, sperm collection from the postorgasms urine is suggested.

Sperm is collected from postorgasmic urine to be used for assisted reproductive techniques. Sperm retrieval is timed with the partner's ovulation. Urine must be alkalinized by ingesting 1-3 g of sodium bicarbonate 3-4 times daily, and pH - which must range between 7.2 and 7.8 immediately before ejaculation - must be checked at every micturition. Because osmolarity of urine deteriorates sperm motility, the patient is asked to drink about 500 ml of water 1 hr before ejaculation. Then the patient voids his bladder and the urine osmolarity level is controlled. If low, it will be rechecked after 15-20 minutes. If high, the patient is once again required to drink about 200 ml of water. When an optimal osmolarity is reached (200-300 mOsm/kg), the patient is asked to have an intercourse or to masturbate. Within 10 minutes after ejaculation, urine must be voided and centrifuged, and the pellet resuspended in 0.5 ml Tyrode's or Ham's F-10 medium and immediately inseminated. As an alternative to this treatment, a catheter may be applied to the bladder and 10-50 ml Tyrode's or Ham's F-10 medium are instilled into it. The patient must ejaculate, and a second catheterism is performed at once to retrieve spermatozoa. The latter treatment minimizes the contact of spermatozoa and urine. In order to perform intrauterine insemination, the sperm quality must be good. Otherwise, the couple must be submitted to in-vitro reproductive procedures (i.e. ICSI) with fresh or cryopreserved spermatozoa.

Anejaculation: drug treatment for anejaculation due to lymphadenectomy and neuropathy is not very effective. The same statement applies to psychosexual therapy in anorgasmic subjects. In all these cases and in spinal cord injured men vibrostimulation is the first line therapy.

In anejaculation vibrostimulation, i.e. the application of a vibrator to the penis, evokes the ejaculation reflex.

Men with a history of autonomic dysreflexia are premedicated with prazosin hydrochloride, 1 mg the night before and 0.5-1 mg 2 h before the procedure. As an alternative, 10-20 mg of nifedipine may be used sublingually before the vibratory stimulation. Vibrostimulation requires an intact lumbosacral spinal cord segment. The more complete the injury above T10, the better the chance of responding to vibrostimulation.

Lack of pinprick or temperature sensation in the saddle area and in the glans penis, inability to feel testicular squeeze, and intact lower limb and bulbocavernosus reflexes suggest a promising outcome with vibrostimulation. Negative prognostic factors are injuries below T10 and flaccid paraplegia. The bladder must be emptied before vibrostimulation. The vibrator is applied around the glans penis and frenulum, with a peak-to-peak amplitude from 1 to 3 mm and a frequency of 80-100 Hz. Ejaculation should be expected within 10 minutes and is followed by flushing, abdominal and leg spasm. Once the safety and efficacy of this procedure are assessed, patients can manage themselves in their own home. Intravaginal insemination via a 10-ml syringe during ovulation can be performed. If quality of semen is poor, or ejaculation is retrograde, the couple may enter an in-vitro fertilization program.

In case of vibrostimulation failure, electroejaculation is the therapy of choice.

Electroejaculation is an electric stimulation of the periprostatic nerves via a probe inserted into the rectum, which seems not to be affected by reflex arc integrity. Electroejaculation requires a good training because of the associated risks of autonomic hyperreflexia and rectal mucosa burning. No anesthesia is required only in case of complete high spinal cord injury. Once the patient is positioned, an automatic blood pressure cuff is applied for continuous readings. The patient is catheterized to empty his bladder and to instill Ham's F10 (or similar medium). Anoscopy is performed to check the integrity of the bowel wall before stimulation. The probe is then placed directly onto the prostate with sufficient pressure to assure continuous mucosal contact with the temperature sensor and metal plates of the probe. Current is then delivered in a sine wave summation profile. Most stimulations are performed for 5-7 minutes. In 90% of the patients electrostimulation induces ejaculation, which is retrograde in one third of them. Semen quality is often poor, although improving throughout repeated ejaculations, and most couples must resort to in-vitro fertilization.

When electroejaculation fails or cannot be performed, sperm retrieval from the seminal ducts may be achieved by:

- Sperm aspiration from proximal vas deferens (see chapter: "Obstructive azoospermia")
- Seminal tract washout (see chapter: "Obstructive azoospermia").

In case of failure of sperm retrieval, epididymal obstruction or testicular failure must be suspected.

- Testicular Sperm Extraction (TESE) (see chapter: "Obstructive azoospermia").

## CONCLUSIONS

Ejaculation disorders can be treated with a wide range of drugs and physical stimulation trials with a high percentage of efficacy.

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