STUTTERING PRIAPISM: CASE REPORT AND BIBLIOGRAPHIC REVIEW


Summary.- OBJECTIVE: To review the presentation, physiopathology, diagnosis and therapeutic alternatives of stuttering priapism with the contribution of a new clinical case.

METHODS: A 25 year old man, studied in another center for recurrent episodes of priapism for about 18 months. These episodes occur daily, significantly interfering with patient’s quality of life.

RESULTS: Initially he was treated with Bicalutamide 50mg/24h with no improvement. Blood test, penile Doppler ultrasound and selective arteriography of pudendal arteries showed no abnormalities. Tadalafil 5mg/24h was given for two months without response. Subsequently were treated with Diazepam 10 mg/24h and Terbutaline 5 mg/24h allowing control of the disease, remaining asymptomatic at present.

CONCLUSIONS: Stuttering priapism is a rare form of presentation of this disease, caused by an alteration in the regulatory mechanisms of erection mediated by SPDE and cGMP.

Several drugs have been proposed in treatment with variable effectiveness, though there is no series long enough to recommend either as first choice. The use of inhibitors SPDE so long, has been used successfully by some groups.

Knowledge of these alternatives is important for the treatment of this complex and unusual pathology.

Keywords: Stuttering priapism. SPDE inhibitors.

Resumen.- OBJETIVO: Revisar la forma de presentación, fisiopatología, diagnostico y alternativas terapéuticas del priapismo recurrente mediante la presentación de un nuevo caso.

MÉTODOS: Varón de 25 años, estudiado en otro centro por presentar episodios recurrentes de priapismo desde hace aproximadamente 18 meses. Estos episodios se producen a diario, interfiriendo de forma importante con la calidad de vida del paciente.

RESULTADOS: Se inicio tratamiento con Bicalutamida 50mg/24h sin mejoria. En la analítica, ecografía doppler peniana y arteriografía selectiva de arterias pudendas no se evidenciaron alteraciones. Se pautó Tadalafilo 5mg/24h durante dos meses sin respuesta. Posteriormente se instauró tratamiento con Diazepam 10 mg/24h y Terbutalina 5 mg/24h permitiendo el control de la enfermedad, quedando asintomático en la actualidad.

CONCLUSIONES: El priapismo recurrente es una forma poco común de presentación de esta enfermedad, producida por una alteración en los mecanismos de regulación de la erección mediados por la SPDE y el GMPC.

Se han propuesto varios fármacos en su tratamiento con eficacia variable, aunque no existen series suficientemente largas para poder recomendar ninguno como primera opción. El uso de inhibidores de la SPDE de forma prolongada, ha sido utilizado con éxito por algunos grupos.

El conocimiento de estas alternativas, es importante para el tratamiento de esta compleja e infrecuente patología.

Palabras clave: Priapismo recurrente. Inhibidores de la SPDE.
INTRODUCTION

Priapism is defined as a prolonged (over 4-6 hours) penile erection in the absence of sexual stimulation or desire.

The term is derived from the Greek god of fertility, Priapus, who large phallus constituted a symbol of masculinity. There are ancient Egyptian texts that speak of this disorder and propose treatments.

The first publication on priapism corresponds to Petraens in 1616, while Callaway described the first case in the English language in 1824 (1).

The incidence of priapism is about one case per 100,000 inhabitants, and has increased in recent years due to the widespread use of intracavernous injections of 5-phosphodiesterase (5PDE) inhibitors for the treatment of erectile dysfunction (2).

A number of causes are involved, including haematological neoplasms, traumatisms, drug substances, insect bites, etc. In most cases (50%) the condition is idiopathic, however.

Priapism traditionally has been classified into three types: ischemic, arterial and recurrent (stuttering) priapism.

Ischemic (low-flow) priapism is the most common presentation, and is characterized by the absence of cavernous blood flow, resulting in a prolonged and generally painful erection with participation of the glans and corpus spongiosum. Cavernous blood gas measurements reveal acidosis, hypercapnia and hypoxia. The condition constitutes a medical emergency, due to the risk of necrosis and fibrosis of the corpus cavernosum, with permanent erectile dysfunction.

The non-ischemic variant (arterial or high-flow priapism) is usually due to the existence of an arterial-cavernous fistula secondary to traumatism, and is characterized by a less intense and painless erection with normal cavernous blood gas findings. This presentation does not constitute a medical emergency.

Lastly, recurrent or stuttering priapism is an infrequent presentation characterized by episodes of priapism (generally during sleep), with normal tumescence between episodes.

CLINICAL CASE

A 25-year-old male had been evaluated in another centre for stuttering priapism lasting approximately 18 months.

The case history revealed no medical or surgical antecedents of interest, no substance abuse, and no apparent triggering event.

According to the patient, the episodes of priapism first manifested once a month, and on several occasions required emergency treatment in the form of intracavernous alpha-adrenergic agents. Six months later and to date, the condition manifested on a daily basis, and exerted a strong impact upon his daily life activities, work, and relationship with his couple.

The episodes consisted of painful nocturnal erections that caused awakening of the patient, with glans swelling and hypersensitivity, and participation of the corpus spongiosum. The condition failed to subside after ejaculation.

The episodes subsided after intense physical exercise for at least an hour, though occasionally treatment in the Emergency Department proved necessary.

At initial evaluation a physical examination and complete laboratory test series were made, discarding haematological neoplastic processes and sickle cell anaemia as possible causes. Treatment was started with tadalafil 50 mg/24 hours for two months, though without improvement of the symptoms.

Due to the persistence of the symptoms, the patient was referred to our centre, where penile echo-Doppler ultrasound and selective pudendal arteriography were performed, discarding the existence of arterial-cavernous fistulas.

With the diagnosis of idiopathic stuttering priapism, treatment was started in the form of tadalafl 5 mg/day for three months, though without success.

Following initial treatment failure, the combined use of terbutaline 5 mg/24 hours and diazepam 10 mg/24 hours for three months was proposed. This resulted in control of the disorder, and the patient presently remains free of symptoms.

DISCUSSION

Stuttering priapism is the least common presentation of priapism. It is characterized by repeated nocturnal episodes of painful erection, generally of short duration (though some episodes may be more prolonged), that require emergency medical management. Between the episodes the patients show normal sexual function. The episodes of priapism may be of high or low blood flow. The most frequent causes of this disorder are sickle cell anaemia and haematological neoplasms, though a large proportion of cases are idiopathic, i.e., with no known cause.

Physiopathologically, priapism is characterized by altered nitric oxide (NO) synthesis by the cavernous smooth muscle endothelium. This leads to diminished expression of a cyclic GMP-dependent
protein kinase, which in turn gives rise to lowered 5PDE levels.

The result of such anomalous cavernous smooth muscle regulation is an altered response to sexual stimuli (nocturnal, reflexogenic or psychogenic) - giving rise to an abnormally prolonged erection (3).

The diagnosis is established from a history of recurrent, painful nocturnal erections, and blood tests are needed to discard possible leukaemias, lymphomas and sickle cell anaemia as potential causes of the disease. Other complementary tests such as echo-Doppler ultrasound of the corpora cavernosa, or arteriography, are indicated to discard arterial-cavernous fistulas, before assuming priapism to be idiopathic.

While many management options have been proposed, no treatment of choice has been established, due to the limited information available in the literature, which mostly comprises either very short patient series or isolated clinical cases (4).

Antiandrogenic drugs and LHRH analogues constitute the classical treatment, with an acceptable response rate, though with an important reduction of libido and testicle atrophy, as demonstrated by Dahm et al. in a series of 9 patients (5).

The administration of digoxin at a dose of 0.25-0.50 mg/day was proposed by Sadeghi-Nejad et al., in a study of digoxin versus placebo. These authors demonstrated an increase in calcium concentration in the cavernous smooth muscle, with a reduction in the frequency of erections and minimal effects upon androgenic function (6).

Oral terbutaline at a dose of 5-10 mg a day has also been used to reduce recurrences thanks to the beta-adrenergic agonistic action of the drug. Lowe carried out a study comparing the efficacy of terbutaline versus placebo in 75 patients with stuttering priapism, with a response rate of 37% (7). In another series of 68 patients, Priyadarschi et al. compared the efficacy of terbutaline versus placebo in the treatment of this disease – recording a response rate of 42% in the terbutaline group versus 15% in the placebo group (8).

Another oral agent that has been used in application to this disorder is baclofen, a GABA receptor agonist that reduces mono- and polysynaptic reflexes at spinal level. However, experience with its use is limited to small clinical series (9).

The use of other drugs such as gabapentin, hydralazine or hydroxyurea has been described in isolated clinical cases.

Recently, continuous low-dose 5PDE inhibitors have been proposed for treating stuttering priapism. These agents allow adequate regulation of the elements that intervene in the erection process: fundamentally 5PDE and cyclic GMP, based on the theory of an altered expression of the former enzyme as the cause of the clinical manifestations – though such use of 5PDE inhibitors remains the subject of controversy (10). 5PDE dysregulation in patients with endotelial Nitric Oxide Synthase deficience leads to a supersensitization of erectile tissue to cGMP, it precipitates a desporportionate erection response due to psychogenic or reflexogenic stimulation like REM sleep and genital manipulation (11).

There are less widely used options such as patient self-administration of intracavernous phenylephrine or other sympathomimetic amines.

The implantation of a penile prosthesis or shunting surgery may be considered in cases refractory to treatment (12).

It is important to establish a differential diagnosis with sleep-related painful erections. These are characterized by altered autonomous function during sleep, resulting in painful erections during the REM phase of sleep, with patient awakening. These conditions generally subside with the adoption of physical measures. Treatment consists of the administration of antidepressants such as amitriptyline, clozapine or paroxetine as a single daily dose before bedtime (13).

CONCLUSIONS

Stuttering priapism is an infrequent form of priapism characterized by an alteration of the 5PDE and cyclic GMP mediated mechanisms that regulate penile erection. The consequence is painful nocturnal erections characterized by high or low blood flow.

A number of drug treatments have been proposed, offering variable efficacy, though the existing patient series are too small to allow the definition of a treatment of choice. Paradoxically, prolonged 5PDE inhibitor use has been used with success by a number of authors, and represents an additional management option.

Knowledge of these alternatives is important for the urologist in relation to the treatment of this complex and infrequent pathology.

REFERENCES AND RECOMMENDED READINGS

(*of special interest, **of outstanding interest)