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Therapeutic Aspects of Priapism at Soubré General Hospital: Six Clinical Cases

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Abstract

Priapism is a common urological emergency in adults and rare in children in sub-Saharan Africa, where the main cause is sickle cell disease. We report six clinical cases, including two cases of low-flow, intermittent ischemic priapism in two children with sickle cell disease aged 10 and 12 years. Among the four other cases, a 46-year-old patient presented with a painful erection after taking herbal medicines to correct erectile dysfunction. Treatment was based on conservative methods, intracavernosal puncture and intracavernosal injection of sympathomimetic agents, and by pass surgery if necessary. The main lesson is that early conservative management can be valuable, as a complement to surgical options, in a context of limited resources.

Keywords

Priapism, Sickle Cell Disease, Etiology, Surgery, Conservative Approach

1. Introduction

Priapism is a fairly common urological emergency in adults and rare in children in developing countries, the main cause of which is sickle cell disease [1]-[3]. Although easily diagnosed, the functional prognosis depends on the speed of treatment, which is sometimes difficult and delayed in our regions [3] [4]. Additional tests should not delay treatment, particularly in cases of ischemic priapism [3] [4].

The objective of this study is to demonstrate the importance of conservative methods and medical treatment alongside surgery. These measures help achieve a state of lasting detumescence to prevent fibrosis of the corpora cavernosa.

2. Observation

Clinical case 1:

A 56-year-old patient, married with four children and no particular medical history, presented with low-flow ischemic priapism that had been developing for two days. Associated symptoms included dizziness and brief loss of consciousness, requiring hospitalization in internal medicine with hypoglycemia at 0.58 g/dl, blood pressure at 11/7, and pulse at 59 beats/min. Hemoglobin electrophoresis was not performed due to a lack of financial resources.

The penis was erect, painful to the touch, and rigid with a flaccid glans. He had lymphopenia at 13.7% and a low prothrombin level at 58%. Tests such as blood gas analysis and penile Doppler ultrasound were not performed due to a lack of availability.

Detumescence of the penis was achieved 15 minutes after aspiration of 600 cc of thick, blackish blood with clots, combined with an intracavernosal injection of 1 ml of ephedrine diluted in 9 cc of isotonic saline solution. 5 cc of the dilution were injected gradually into each corpus cavernosum over five minutes. There were no side effects after the injection, which was followed by a Velpeau bandage. Blood pressure was 10/7 and pulse was 60 beats/min after the injection. The patient was rehydrated with 2 L/24 H during treatment.

Upon discharge, the patient was referred to cardiology and hematology consultations for investigations to determine the cause.

Erectile function was not assessed after treatment as the patient was lost to follow-up.

Clinical case 2:

19-year-old patient, high school senior, SS sickle cell trait, parents with AS sickle cell trait. History of three surgical treatments for priapism in the previous year. The patient consulted for recurrent ischemic priapism with low blood flow that had been developing for eight hours. On examination, the patient was emaciated with marked jaundice and pale conjunctival mucosa. Vital signs showed blood pressure of 10/6, pulse rate of 70 beats/min, and temperature of 37˚C.

His penis was erect, painful to the touch, rigid with a hard glans, and had a 1.5 cm transverse scar on the glans 0.5 cm from the balano-preputial sulcus. He had severe anemia at 7 g, hyperleukocytosis at $2{,}010^3$ and thrombocytosis at $60{,}010^6$ mg/L. Puncture drainage of the corpora cavernosa yielded 800 cc of thick, viscous, blackish blood. Detumescence was observed after 10 minutes. The recurrence of another ischemic priapism 24 hours after the intracavernosal puncture required second-line treatment: a cavernoso spongiosus shunt according to Ebbéoj with a compression bandage.

Detumescence was observed after 20 minutes. On day 1, a recurrence of painful erection with rigid cavernous bodies was observed and resolved after injection of diazepam 10 mg/day/IV for 3 days, followed by mexazolam 1 mg/day tablets in the evening for 1 month. The patient is stable and has not had priapism for two years, with no morning erections or erections caused by sexual stimulation. The

patient has been followed up in hematology for sickle cell disease for 5 years.

Clinical Case 3:

A 10-year-old patient, a student with sickle cell anemia SS, consulted for ischemic priapism that had been developing for 4 days. His mother reported several previous episodes of ischemic priapism at 3-month intervals, resolved by traditional, undocumented treatment. On examination: the penis was painfully erect and rigid with a flaccid glans. Hypotension of 9/6, a pulse rate of 80 beats/min, and a temperature of 37˚C were noted. He had anemia of 7 g/dl and hyperleukocytosis with $28.9 \times 103/mm^3$.

An injection of 0.5 cc of ephedrine diluted in 4.5 cc of saline solution was administered every 5 minutes, up to 2 injections into the corpora cavernosa. Detumescence occurred after 5 minutes with a blood pressure of 11/7 and a pulse rate of 60 beats per minute, but painful tumescence of the penis was observed on day 2 of hospitalization, which was resolved by simple means (walking, games) and the administration of 0.25 mg/kg of diazepam in the evening for 1 day. In a one-year follow-up, the patient is stable with painless morning erections and is currently being monitored by hematology.

Clinical Case 4:

A 46-year-old patient, married and father of eight children, consulted for ischemic priapism that had been developing for 22 hours following the intake of a traditional medicine at twice the dosage indicated on the bottle in order to correct erectile dysfunction. On examination: painful, rigid erection with flaccid glans and presence of condylomas on the external genitalia. An injection of 0.5 cc of ephedrine diluted in 9 cc of saline solution was administered into the corpora cavernosa. The dilution was administered at 4 cc in each corpus cavernosum for 5 minutes, combined with minor measures and oral hydration of 3 L/24 hours. Vital signs were good after injection, with no side effects at the injection sites. Detumescence was achieved one hour and thirty minutes after the procedure. The patient was in good condition and referred to dermatology for treatment of genital condylomas. One week later, erectile function was preserved and sexual activity resumed with condoms.

Clinical Case 5:

A 47-year-old patient with no particular medical history, married and father of five children, consulted for painful erection without any sexual stimuli, which had been developing for three days and had not been resolved by minor measures or sexual intercourse. On examination, the penis was painfully erat and rigid, with a flaccid glans. The patient had a single episode of ischemic priapism. Tests such as blood gas analysis and penile Doppler ultrasound were not performed due to lack of availability in our facility. Hemoglobin electrophoresis was normal.

Detumescence of the penis was achieved 20 minutes after aspiration of 800 cc of thick, viscous, blackish blood, combined with an intracavernosal injection of 1 cc of ephedrine diluted in 9 cc of isotonic saline solution. Five cc of the dilution were injected gradually into each corpus cavernosum over five minutes. There

were no side effects after the injection, which was followed by a Velpeau bandage. Blood pressure was 9/6 and pulse was 60 beats/min after the injection. The patient was rehydrated with 2 L/24 H during treatment. Upon discharge, his vital signs were good with blood pressure at 12/7 and pulse at 70 beats/min. The patient was stable with satisfactory erectile function two weeks after discharge. The causal diagnosis could not be established because the patient was lost to follow-up one month after treatment.

Clinical Case 6:

A 12-year-old student with no particular medical history consulted for recurrent erections, sometimes painful, lasting 6 to 10 seconds before detumescence, which had been occurring for 6 months. The patient presented with intermittent priapism, and these erections occurred at school, causing the patient anxiety.

On examination: no tumescence of the penis, which appeared normal.

Laboratory tests: blood count was normal. Hemoglobin electrophoresis confirmed sickle cell anemia AS.

The patient was referred to hematology with counseling on lifestyle and dietary measures.

3. Discussion

Although priapism is described as rare, it remains present in our regions, especially in sub-Saharan Africa, due to hematological causes. However, sickle cell disease remains the leading cause in children requiring appropriate care [5]. It is the main etiology of the cases reported in our study among children. Similarly, Falandry [5] reported 52% of cases with the same etiology in his study. Venous congestion or sleep vagotonia [6] could be one of the mechanisms causing priapism in sickle cell disease. This sleep vagotonia would cause a slowdown in circulation, with a decrease in PO_2, a factor in sickling, which itself aggravates stasis and promotes thrombosis [6]. In two of our cases, benzodiazepines were used to calm recurrent priapism attacks by acting on sleep. This phenomenon helps us understand why there is still no consensus [1] on the management of priapism. Although the data in the literature are limited, benzodiazepines [7] could be a therapeutic approach worth exploring to prevent recurrence of low-flow priapism and improve patients' quality of life through their anxiolytic effect, muscle relaxant effect on the perineal muscles, helping to reduce tension on the corpora cavernosa, and an effect on dopaminergic and serotonergic neurotransmission [7] [8] involved in the regulation of erection.

In our series of cases, three patients underwent cavernous puncture, even though it is recognized as being less effective than other treatments, with a success rate of 30% in the literature [9] [10]. Consequently, this therapeutic approach is accompanied by intracavernosal injection of sympathomimetic agents with an efficacy ranging from 0 to 100% of cases [11]. In our series, five patients received intracavernosal injection of ephedrine, which was chosen for its availability, especially in our region. Its role allowed us to achieve α-receptor-mediated vasocon-

striction in the corpus cavernosum, thereby promoting detumescence [9] [10]. However, in the literature, the use of intracavernosal phenylephrine is most widespread, as its side effects are less when administered in high doses. Heart rate and blood pressure do not appear to be significantly affected by the drug. Phenylephrine may prevent stuttering priapism and achieve effective and rapid detumescence [12].

Furthermore, in our study, one case was subjected to physical activity, taking into account the etiological factor. Despite the low success rate reported in the literature, conservative methods such as ice packs, physical exercise, cold showers, and ejaculation have been shown to be effective in resolving priapism in 1 to 55% of cases, compared to surgery [11]. It should be noted that our study has certain limitations. First, the small sample size could limit the statistical significance of the data and the generalizability of the results. In addition, the etiological study was not performed in all cases, particularly with regard to tests such as electrophoresis, which may have prevented the identification of certain underlying causes of priapism. Finally, the loss of follow-up of some patients may have introduced a selection bias. These limitations should be taken into account when interpreting the results and highlight the need for larger and more comprehensive studies to confirm our findings.

4. Conclusion

Management was adapted according to the type of priapism, etiological factors and duration of priapism. However, conservative methods are important in the first hours after the onset of priapism. Drug treatment remains relevant before surgery or after surgery.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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