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Case Report

Ischemic Priapism Leading to Penile Gangrene in A Patient with Phimosis: A Case Report and Review of the Literature

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Abstract

Background : Ischemic priapism is a surgical emergency that requires rapid management to maintain penile functional prognosis. Penile gangrene is an unusual complication of ischemic priapism.

Objective : To present a unique case of ischemic priapism progressing to penile gangrene in a patient with a tight phimosis. The aim was to discuss our therapeutic approach and to review the literature.

Case summary : A 38-year-old male patient presented with ischemic priapism and tight phimosis. The current priapism episode was the first. The patient's medical history includes hypertension and stage 4 chronic kidney disease. After degloving the penile shaft and performing a circumcision, the patient underwent surgery for Al-Ghorab shunt plus intracorporal tunneling. The intraoperative findings showed no red bleeding from the cavernosal bodies. We decided to keep observing the patient. On the third postoperative day, we noted a dry gangrene of the penis. After counselling, informed consent was taken to perform total penectomy with perineal urethrostomy.

Conclusion : Priapism rarely progresses to penile gangrene. The present case was unique because it occurred in a tight phimosis.

Keywords : Penile gangrene; Phimosis; Priapism

Introduction

Priapism is defined as a prolonged penile erection lasting for more than 4 hours in the absence of sexual stimulation and remains despite orgasm [1]. Ischemic priapism is the most common form, accounting for 95% of all priapism cases [2]. Ischemic priapism is a surgical emergency that requires rapid management to maintain penile functional prognosis. Penile gangrene is an unusual complication of ischemic priapism [3]. Here we report a unique case of ischemic priapism progressing to penile gangrene in a patient with a tight phimosis. The aim was to discuss our therapeutic approach and to review the literature.

Case Presentation

A 38-year-old male patient presented to the emergency department with a persistent and painful erection that lasted 48 hours with no triggering factors such as drug use or sexual stimulation. He said he hadn't had sex in ten years because of phimosis. The current priapism episode was the first. The patient's medical history includes hypertension and stage 4 chronic kidney disease. The patient's medical follow-up was irregular. On examination the patient was conscious, temperature was 37.2˚ Celsius, pulse rate was 80beats per minute, respiratory rate was 18 breaths per minute, blood pressure was 125/60 mmHg. The penis was erect to about 50˚, painful, with a tight phimosis that prevented seeing the glans (Figure 1A**).** The laboratory findings at the patient's admission showed hemoglobin of 10.5g/dL, leukocytes $6.4x10^3$, platelet count 160×10^3/L, creatinine 16.8mg/dL, urea in serum 27.0 mmol/L (2.50-7.50), phosphoremia 3.23mmol/l (0.80-1.61), calcemia 1.56 mmol/l (2.00-2.65), kalemia 4.2 mmol/l (3.1-5.1). A diagnosis of ischemic priapism with tight phimosis has been made. After degloving the penile shaft and performing a circumcision, the patient underwent surgery for Al-Ghorab shunt plus intracorporal tunneling (Figure 1B). The intraoperative findings showed no red bleeding from the cavernosal bodies. We decided to keep observing the patient. The patient was given antibiotic. On the third postoperative day, we noted a dry gangrene of the penis (Figure 1C). After counselling, informed consent was taken to perform total penectomy (Figure 2) with perineal urethrostomy (Figure 3). The intraoperative findings showed more extensive ischemic damage of corpus spongiosum and corpora cavernosa tissu. The patient postoperative recovery was uneventful and he was discharged 72 hours after surgery. Approximately two months later, the patient was seen with a stenosis of the urethrostomy. Histological examination revealed no evidence for calciphilaxis. Written informed consent has been provided by the patient to have the case details and any accompanying images published.

Figure 1 : (A) : Penile was erect. (B) : After degloving the penile shaft and performing circumcision. (C) : Dry penile gangrene on the third postoperative day.

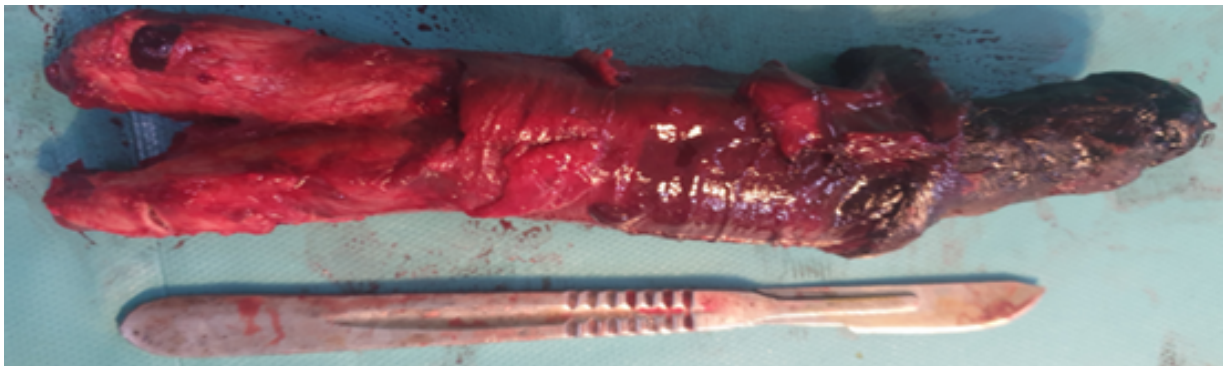

Figure 2 : Penectomy speciemen.

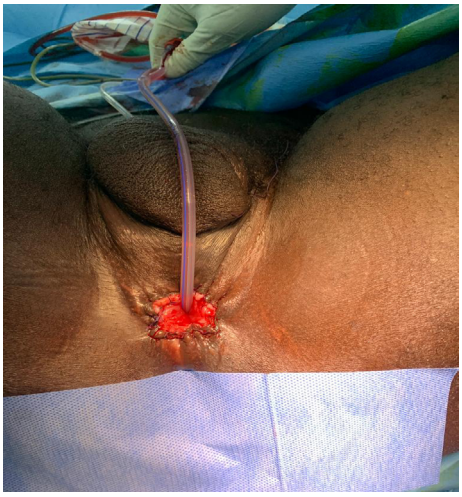

Figure 3 : Perineal urethrostomy**.**

Discussion

Penile gangrene is a very rare complication of ischemic priapism [4]. We report here a case of ischemic priapism progressing to penile gangrene in a patient with a tight phimosis. Objective was to discuss our therapeutic approach and to review the literature. To our knowledge the present case is a unique case report. Indeed, penile gangrene due to ischemic priapism in adult with a tight phimosis has not been previously reported. We conducted a literature review and found that only 29 cases of ischemic priapism with penile gangrene have been previously reported to date [3,5-16]. In most reported cases, penile necrosis occurred after surgical treatment of priapism [3,5,6,8-11,13-16]. In the present case, the necrosis was already present when the patient was admitted to the emergency room. Only two cases of priapism with penile necrosis at the time of hospital admission have been reported to date [7,12].

Khoriaty et al [4] suggested that in most cases a tight compressive bandage around the penis and local infection was responsible for the development of penile necrosis in majority of case. Our case was remarkable in that it occurred in a patient with tight phimosis. Only one paper in the literature has reported a case of penile necrosis following phimosis in a 12 year old boy [17]. Obstruction, inflammation, and penile edema can provoke an ischemic process that leads to infection [18]. The present case combined several factors : chronic renal failure, high blood pressure and phimosis. In the present case we think that priapism was the main cause of penile gangrene and that phimosis was a contributing factor. Histological examination revealed no evidence for calciphilaxis. There are two treatment strategies for dry gangrene : conservative management and partial penectomy [19]. In the present case, the initial treatment was conservative. But as the necrosis spread, we performed a total penectomy. In case of conservative treatment, circumcision is recommended [20]. In the present case, we did not perform total penectomy immediately. However the evolution was marked by the onset of dry gangrene of the whole penis. A total penectomy was then performed. Total penectomy for priapism progressing to penile gangrene is rare. The present case is one of the rare cases reported in the literature. In a literaure review, we found only three cases of total penectomy for priapism progressing to penile gangrene [5,10,21].

Conclusion

Priapism rarely progresses to penile gangrene. The present case was unique because it occurred in a tight phimosis. In case of dry gangrene management have to be initially conservative. After total penectomy, it is necessary to provide the patient with psychological support.

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