Case Report

Long-term follow-up of penile glans necrosis due to paraphimosis

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Introduction: Paraphimosis is a urologic emergency in which the foreskin of the penis becomes trapped behind the coronal sulcus and forms a tight band of constricting tissue. Surgical or conservative release of this constriction is required for the treatment. Delayed treatment will cause devastating outcomes, such as penile glans necrosis. A few studies have reported penile glans necrosis/gangrene, but long-term follow-up of the recovery from glans necrosis due to paraphimosis has not been previously reported.

Case presentation: A 25-year-old man who experienced glans necrosis following paraphimosis was not treated promptly with circumcision. The patient underwent conservative treatment with debridement of necrotic tissue and cystostomy for urethral meatal necrosis. We were able to prevent partial penectomy. His penile glans was covered with healthy epithelium and retained its natural shape and voiding and erectile functions were normal 2 years after the treatment.

Conclusion: We report successful conservative management of penile glans necrosis.

Key words: cystostomy, debridement, long-term follow-up, paraphimosis, penile necrosis.

Keynote message

We report successful conservative management for glans necrosis following advanced paraphimosis. Non-surgical management is an option for the treatment of glans necrosis that can provide good cosmetic and functional outcomes, when close follow-up of the patient’s condition is possible.

Introduction

Paraphimosis is a urologic emergency that occurs when the foreskin of the penis is retracted over the glans. The tight ring of preputial skin constricts the distal penis causing vascular occlusion.1,2 Surgical and other conservative treatments for release of the constriction are required. Inadequate release of the constriction can lead to tissue necrosis, partial amputation,3,4 and removal of necrotic tissue.5

We managed the long-term follow-up of a case of glans necrosis following paraphimosis that was not released early with circumcision. We report successful conservative management with debridement of necrotic tissue and cystostomy for urethral meatal necrosis. The patient retained the natural appearance of the glans and urethral meatus without dysfunction. This is the first report to describe the process of long-term recovery from glans necrosis 2 years after conservative treatment.

Case presentation

A 25-year-old man with paraphimosis was referred from another clinic. He suffered with schizophrenia stabilized with oral medication. Paraphimosis occurred following masturbation. He visited a local hospital 1 week after paraphimosis onset. An attending urologist referred
him to our hospital. On presentation, the penile glans and prepuce were hard and swollen, and the ring of preputial skin constricted the distal penis so tightly it was pale. These findings suggested an advanced ischemic condition. He did not complain of pain. The day after presentation, we tried surgical repair of his paraphimosis. During surgery, we first tried to correct blood congestion in the penile glans. We penetrated the glans penis with a sharp scalpel blade and removed blood from the glans; the glans was collapsed. We then circumcised the constricting ring of preputial skin that was already necrotic. We speculated that penile necrosis and failure of sutures would occur due to tissue necrosis. We informed the patient and his mother of this possibility. They agreed to long-term follow-up with hospital management.

On the 10th postoperative day, the surface of the glans was covered with a hard black dried scab. Deeper necrotic tissues were observed following removal of the scab. We debrided necrotic tissues in bed side (Fig. 1). He did not feel any pain in debridement without anesthesia. The external urethral meatus was returning to the coronal sulcus level due to glandular necrosis (Fig. 2). To prevent local and systemic infection and further damage by a transurethral catheter, cystostomy was performed. At this time, no sign of systemic inflammatory response syndrome was evident due to physical examination, body temperature, and blood test in contrast to the surgical case in the previous report. In addition, his personal situation permitted for long-term hospitalization. Then we decided on conservative management to prevent penile partial amputation as he was 25 years old. Partial amputation may impact on his mentality and body image significantly. Thus, we aimed to preserve his natural shape of penis and penile length as long as possible.

On the 30th postoperative day, most necrotic tissue was gone, and healthy tissues had appeared. Two months after surgery, the surface of the penile glans was covered with healthy tissue without infection. The external urethral meatus was repositioned at the level of the coronal sulcus without stenosis. The patient could urinate from the external meatus. The cystostomy was removed. His penis has retained natural shape of the penile glans and shaft (Fig. 3). We decided that the patient could be discharged.

His penis has retained the natural shape of the penile glans that covered with epithelium and shaft, and voiding and erectile functions were normal at 1 and 2 years after treatment, although the penile glans is somewhat smaller than it was prior to the event. He did not feel any pain in ordinary activities.

Fig. 1 Surface of the glans covered with a hard black dried scab. Deeper necrotic tissues were observed when the scab was removed.

Fig. 2 Position of the external urethral meatus returning to the coronal sulcus level due to glandular necrosis.

Fig. 3 Surface of the penile glans was covered with healthy tissue without infection. The external urethral meatus was repositioned at the level of the coronal sulcus without stenosis 2 months after starting treatment.
life and sexual activity. He can ejaculate with full erection by masturbation, although sensation of his glans has dull senses.

**Discussion**

Paraphimosis is a urological emergency that occurs when the foreskin is retracted over the glans and cannot return to its normal position. The constriction ring of preputial skin leads to constriction of the distal penis and venous engorgement, resulting in skin edema and distal necrosis. In general, paraphimosis should be managed immediately by either external compression, manual preputial repositioning, dorsal slit, or circumcision. When treatment of paraphimosis is delayed, glans and urethral necrosis and gangrene are likely. Such advanced conditions are managed by partial penectomy, glansectomy, or excision of the necrotic area, depending on the situation.

The current report indicates that favorable natural recovery from penile glandular necrosis caused by paraphimosis is possible with conservative intervention. No previous case has been reported for such long-term follow-up of an advanced case of paraphimosis that resulted in glandular necrosis in spite of circumcision. We aimed to preserve his natural shape of penis and penile length as long as possible with considering psychological impacts on his mentality and future cosmetic and functional problems by amputation. We were able to provide supportive care to prevent partial penectomy in a hospital setting. Fortunately, the patient’s personal situation allowed him to remain hospitalized for a long period. Debridement for necrotic glandular tissue and cystostomy encouraged recovery of the epithelium and prevention of focal and systemic infection. Consequently, the patient lost most of the glandular tissue. However, his penis retained its natural shape and normal erectile and voiding functions without meatal stenosis. This outcome is a most favorable achievement. A previous report of glansectomy for glandular gangrene is available, but details of cosmetic and functional outcomes were not included.

In conclusion, we report successful conservative management for glans necrosis following advanced paraphimosis. Nonsurgical management is an option for the treatment of glans necrosis that can provide good cosmetic and functional outcomes, when close follow-up of the patient’s condition is possible.

**Conflict of interest**

The authors declare no conflict of interest.

**References**

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