

## Glans necrosis

### *Necrose de glande*

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### ABSTRACT

Ischemic necrosis of the glans penis is a rare entity. To this day, roughly fifteen cases have been described. Certain physiological abnormalities are commonly found in association with this condition, including diabetes, chronic renal failure and peripheral vascular disease. Usually the penile lesion suffers black-mummy-shaped necrosis or liquefaction and progresses from dry to wet gangrene. Correct diagnosis and early treatment are essential for a successful treatment.

**Indexing terms:** Ischemia. Necrosis. Penile disease. Renal dialyses.

### RESUMO

*Necrose isquêmica do pênis é uma situação rara. Atualmente há cerca de 15 casos relatados na literatura. Distúrbios fisiológicos estão comumente associados aos*

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*episódios de necrose de glânde, como diabetes, insuficiência renal crônica e doença vascular periférica. Frequentemente a lesão peniana se mumifica, porém ela pode evoluir com liquefação tecidual, progredindo para lesão peniana úmida. O diagnóstico correto e intervenção precoce são essenciais para o sucesso do tratamento.*

**Termos de indexação:** *Isquemia. Necrose. Doenças do pênis. Diálise renal.*

## INTRODUCTION

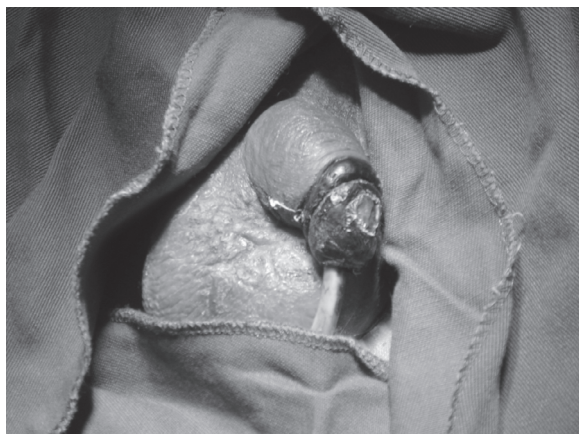
Ischemic necrosis of the glans penis is a rare entity. Until 1994 only three cases had been reported in the literature. To this day, roughly fifteen cases have been described<sup>1</sup>. Certain physiological abnormalities are commonly found in association with this condition, including diabetes, chronic renal failure and peripheral vascular disease. Urethral catheterization may predispose to ischemia of the glans and necrosis<sup>2</sup>. Usually the penile lesion suffers black-mummy-shaped necrosis or liquefaction and progresses from dry to wet gangrene<sup>3</sup>. The resolution of this disease requires accurate and early diagnosis followed by partial or total penectomy.

## Case Report

*First case:* The patient was a 57-year-old man with insulin-dependent *diabetes mellitus* since age 47 years and undergoing hemodialysis for diabetic nephropathy for the last four years. He had severe peripheral vascular disease that required partial leg

amputation despite three revascularizations. While in the hospital for cardiovascular surgery, his urethra had to be catheterized because of a urinary retention. Two days later, he complained of glans pain where there was a small darkening lesion that affected the entire glans within nine days, when a partial penectomy was indicated (Figure 1). The pathology report showed ischemic necrosis and arterial and venous thrombosis. He died three months later due to a myocardial infarction.

*Second case:* The patient was a 63-year-old male with diabetic nephropathy who had undergone hemodialysis since age 58 years. He had had many macro- and microvascular diabetic complications such as retinopathy and peripheral neuropathy. During a hemodialysis session, he presented a small, painful, purple dot in the glans penis, medicated with analgesics. The lesion and the pain increased substantially over four days, when the lesion became wet and the patient developed fever and leukocytosis. He was submitted to partial penectomy and antimicrobial therapy (Figure 2). Nevertheless, he developed sepsis and died four days after surgery.



**Figure 1.** Penile with black-mummy necrosis.



**Figure 2.** Initial penile lesion.

## DISCUSSION

Distal penile necrosis associated with renal failure is a rare entity that can be associated with infection, trauma or ischemia<sup>4</sup>. Some diseases are usually found in association with this condition, including advanced diabetes, renal failure, hyperparathyroidism and peripheral vascular disease.

Stein et al.<sup>1</sup>, reported seven cases of penile necrosis. Five patients were treated expectantly with analgesic and antibiotics, with gangrene resolution in 2 and disease stabilization in 3. Three of the 5 patients recovered as expected and two who underwent penectomy died within 3 months. Hakim et al.<sup>4</sup> concluded that there is no advantage in treating penile gangrene associated with renal failure aggressively with surgery, since the outcome is quite similar. Therefore, expectant treatment of the affected patients may be the best option<sup>1</sup>. Nevertheless this is not a consensus. Bali et al.<sup>5</sup> concluded that there is an association between uremia in diabetics and predisposition to an ischemic-infectious lesion of the penis that fails to respond to antimicrobial therapy, since micro- and macrovascular disease prevents efficient antibiotic concentration in the tissue<sup>5</sup>.

In 1999, Kosar et al.<sup>6</sup> reported a case of glans penis necrosis in a 69-year-old man who had been submitted to a transurethral resection of the prostate for benign prostate hyperplasia, followed by urethral catheter traction<sup>6</sup>. Another way to treat penile ischemia may be to perform an arteriovenous interposition bypass graft between the common femoral artery and the deep dorsal vein of penis. This option was successful in a case where retrograde flow into the corpus spongiosum resulted in immediate pain relief and healing of the ischemic lesions<sup>7</sup>. Kumbkarni et al.<sup>8</sup> report a case of unilateral penile gangrene associated with ipsilateral partial stenosis of the common iliac artery, treated with partial penectomy.

## CONCLUSION

Glans necrosis is a rare entity, frequently associated with diabetes, micro- and macrovascular disease and renal failure. Correct diagnosis and early treatment are essential to prevent its high morbidity and mortality.

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