Abscess of the corpora cavernosa

Campos-Salcedo José Gadu,1 Terrazas-Rios José Luis,2 Sedano-Lozano Antonio,3 Castro-Marin Melchor,4 Flores-Terrazas José Efrain,5 López-Silvestre Julio Cesar,6 Zapata-Villalba Miguel A.,6 Mendoza-Alvarez Luis A.,6 Estrada-Carrasco Carlos E.,5 Paredes-Calva Claudio,5 Rosas-Hernandez Héctor.5

ABSTRACT

Penile abscesses are a rare cause of infectious penile pathologies. Among the most important causes are immunosuppressed states, trauma, the administration of intracavernous medication, and adjacent site infection. The most commonly reported etiologic agent is Escherichia coli, although new bacterial and mycotic agents have recently arisen. Diagnosis requires complete evaluation with a high degree of suspicion.

The patient is a 58-year-old man with diabetes and ongoing high blood pressure who presented with one-month progression of urinary storage symptoms and subjective fever. He was referred to the emergency room due to severe acute loss of metabolic control and urinary tract infection symptoms. A transurethral catheter was placed and removed after one week. The patient presented with a non-painful increase in penile diameter, augmented penile temperature, and important edema and temperature elevation in the corpora cavernosa that was painless upon palpation. The patient underwent transperineal open drainage of the corpora cavernosa, and the wound was washed and closed by secondary intention. The patient later underwent fifteen hyperbaric oxygen sessions at 2.6 atm.

RESUMEN

Los abscesos penianos constituyen una rara causa de patologías infecciosas en pene. Dentro de las causas más importantes se encuentran estados de inmunosupresión, trauma, así como la administración de medicamentos intracavernosos e infecciones en sitios adyacentes. El agente etiológico más común reportado es Escherichia coli, aunque recientemente han surgido nuevos agentes bacterianos y micóticos. Su diagnóstico requiere una valoración completa, con un alto índice de sospecha.

Se presenta el caso de paciente masculino de 58 años, diabético e hipertenso de larga evolución, con síntomas urinarios de almacenamiento, así como fiebre no cuantificada. Fue referido al Servicio de Urgencias, debido a que presentó una pérdida aguda de control metabólico y cuadro de infección urinaria, por lo que se colocó sonda transuretral, la cual se retiró en una semana. Presentó un incremento progresivo no doloroso del diámetro peniano, aumento de la temperatura peniana, con importante edema y elevación de temperatura en cuerpos cavernosos, indolora a la palpación. El paciente fue sometido a drenaje abierto de cuerpos cavernosos por vía transperineal, realizándose lavados de la herida y cierre...
Abscess of the corpora cavernosa is a rare clinical entity that mainly presents in patients with immunosuppression factors such as diabetes mellitus and with chronic infections. Diagnosis requires a high degree of suspicion, thorough physical examination, and diagnostic study support. The most useful is abdominopelvic computed axial tomography, which enables both diagnosis and opportune treatment.

**Keywords:** Abscess, penile, cavernous, Mexico.

**INTRODUCTION**

Abscess of the penis is a rare infectious pathology, even for the urologist, and its presentation is secondary to various etiologies that include infections, urinary tract manipulation, immunosuppressed states such as diabetes mellitus, and chronic infections such as HIV infection. Despite the low frequency of this pathology, it is a challenge for the urologist that requires a high degree of suspicion, as well as appropriate and intensive treatment, in order to limit its often devastating complications and aftereffects.

**CASE PRESENTATION**

The patient is a 58-year-old male construction worker with government health insurance. His past medical history included chronic smoking of 5-10 cigarettes a day over a 20-year period, chronic habitual alcohol consumption occasionally ending in drunkenness, and type II diabetes and high blood pressure, both of 5-year progression and with irregular control. His present condition had an approximate 1-month progression with symptoms of bilateral orchialgia accompanied with dysuria and urinary frequency and urgency. The patient also had subjective fever for 10 days prior to admission. He was referred to the emergency room for hyperglycemic-type acute loss of metabolic control with glucose values of 500 mg/dL and with symptoms of urinary tract infection. The patient was initially managed with urinary drainage by means of urethral catheter that was removed after 7 days when he presented with spontaneous micturition. In addition, the patient was given wide-spectrum cephalosporin-based intravenous antibiotics and his fever subsided.

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The patient was evaluated by the urology department due to a seven-day progression of volume and temperature increase of the corpora cavernosa, but with no pain, that had been managed conservatively up to that point. Physical examination showed the patient’s general condition to be regular; he was conscious, oriented, and had no cardiopulmonary or abdominal alterations. Genital examination revealed augmented penile volume involving both corpora cavernosa with firm consistency, no pain upon palpation, and an increase in temperature. The urethra was central and non-secreting at that time (Figure 1). Rectal examination revealed a grade 2 prostate with regular edges that was renitent and mobile. It had no palpable nodules, was not warm, was non-secreting, and non-painful. Laboratory studies reported leukocytosis with figures of $16.72 \times 10^3$ due to neutrophilia of 80.5%.

The patient was initially referred to the urology department for suspicion of non-ischemic priapism, for which ultrasound imaging of the corpora cavernosa was carried out. It documented a hypoechoic, heterogeneous collection situated in both corpora cavernosa. Percutaneous puncture of the corpora cavernosa resulted in the release of purulent matter (Figure 1).
Abdominopelvic computed tomography (CT) scan was ordered that revealed hypodense images corresponding to a collection in both corpora cavernosa, with a density of 15 HU, suggestive of liquid that extended to the bases of the corpora cavernosa (Figures 3, 4, and 5).

Surgical drainage of the abscess was carried out through transperineal approach along the midline raphe by means of a vertical incision extending to the corpora cavernosa, performing bilateral corporotomy and obtaining approximately 100 cc of purulent matter (Figure 6), as well as detritus corresponding to necrosis. External urinary diversion by means of cystostomy was carried out in the same surgery. Both corpora cavernosa were washed and the wound was left open to have secondary intention closure. Parenteral antibiotic therapy management was continued (Figure 7). The patient later underwent a total of 15 hyperbaric oxygen sessions at a pressure of 2.6 atm. His progression was satisfactory and he was released on the 21st postoperative day. At one-month follow-up, the wound had adequate cicatrization and the patient had spontaneous micturition and so cystostomy was removed. The patient has remained asymptomatic and has not yet had an erection.

**DISCUSSION**

Penile abscesses are an infrequent clinical entity and mainly present in patients with immunosuppressed states such as diabetes mellitus and HIV infection, or with chronic infections, such as periodontitis or dental caries, tuberculosis, and in patients with foreign bodies in the urinary tract, such as penile prostheses and the injection of intracavernous drugs. The most commonly found etiologic agent is *E. coli*, followed by *Neisseria gonorrhoeae* in patients with a previous history of sexually transmitted diseases. Clinical presentation can have a wide variety of manifestations, from painless penile volume increase and tumefaction, which can be confused with priapism, to potentially fatal septic states. In the past, diagnosis was based on physical examination, accompanied with corpora cavernosa puncture.

Current diagnosis is based on complementary imaging studies. Ultrasound of the corpora cavernosa is the most widely used and displays hypoechoic, heterogeneous zones with no Doppler signal in their interior. It also enables drainage directed at collections to be carried out for both diagnostic and therapeutic purposes. Abdominopelvic CT scan provides excellent anatomical details in patients with urinary tract infections. The presence of gas can be observed with a density of -150 HU or lower, or liquid with a density of 0 HU. In addition computed axial tomography (CAT) scan enables percutaneous drainage of small collections to be carried out, as reported by Thanos et al.

Treatment is based on collection drainage with adequate antibiotic coverage attacking the causal microorganisms, or if such is the case, taking into consideration the presence of bacteria-forming gas. We opted to perform open drainage, obtaining adequate corpora cavernosa exposure and letting the wound close by secondary intention. Other authors have described primary intention closure with Penrose open drain...
Abscess of the corpora cavernosa placement. Likewise, external urinary diversion is recommended, preferably by means of cystostomy, until the infectious process is resolved and adequate micturition function has been recovered.

Possible postoperative complications include the loss of erectile function with sexual function deterioration. There can also be penile curvature secondary to fibrosis that causes the inflammatory process triggered by infection, as well as important esthetic deformity and functional incapacity of the penis.

**CONCLUSIONS**

Abscess of the corpora cavernosa is a rare pathology with a wide variety of clinical manifestations. The urologist must suspect this infectious nosologic entity when treating patients with well-established risk factors such as immunosuppression, chronic infection, and instrumentation of the urinary tract. Diagnosis requires a high degree of suspicion and thorough physical examination with diagnostic study support, the most useful of which is CAT scan, because it adequately defines abscess.
extension so that opportune and effective open or percutaneous surgical management can be carried out.

REFERENCIAS