

CASE REPORT

Atypical primary tuberculosis mimicking an advanced penile cancer. Can we rely on preoperative assessment?

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Abstract

Tuberculosis of penis is a very rare clinical entity. There are isolated reports of its presentation as a subcutaneous nodule with or without superficial ulcers and can be interpreted as advanced penile cancer. We present a case of penile tuberculosis that presented in our Center with a bulky penoscrotal formation treated in other center for the suspicion of Fournier gangrene.

Keywords: advanced penile cancer, penile tuberculosis, total penectomy, epidural anesthesia.

Introduction

Tuberculosis of the penis represents an uncommon disease, especially in the European Countries, since the introduction of tuberculostatics [1].

It may be presented as an extrapulmonary form of tuberculosis, or, in rare cases, as primary lesion of the gland after contact with female genital ulcers [2, 3].

The main differential diagnosis of this entity is with penile cancer, by performing a biopsy of the lesion [4].

However, is not always easy to differentiate between these two entities, especially in cases with previous scrotal interventions.

Here we present a case of primary penile tuberculosis of the penis, admitted in our Center after he was previously treated in another territorial unit for Fournier gangrene.

Patient, Methods and Results

Patient, A.V., 61-year-old, without medical history, treated in another territorial unit for suspicion of Fournier gangrene, where peno-scrotal wide drainage incisions were performed in August 2011, presents in our clinic for the increasing of volume of the scrotal content associated with perineal pain.

Physical examination revealed a penoscrotal bulky pseudotumoral formation, fixed to the deep plains, which includes the penis, penile urethra, without boundaries to the corpus cavernosum; groin assessment identified bilateral palpable superficial inguinal lymph nodes, bulkier on the right side, mobile in relation to the deep plains, painless, with no tendency to suppuration (Figure 1).

Routine laboratory studies of blood tests, urine-analysis, liver and renal function tests were within normal limits.

Chest X-ray: No active lesions.

Figure 1 – Penoscrotal bulky pseudotumoral formation, with postdrainage scarring on the right hemiscrotum.



Pelvic and perineal MRI: Bulky tumor with low signal T1-/T2-WI, with gadolinium enhancement, vaguely defined which disrupts the continuity of the sheath of both corpora cavernosa in the distal segment. No limit of demarcation with the spongy body. The tumor invades the soft tissues adjacent to the lining of the scrotum, with no apparent invasion of epididymis or testicular structures, with more pronounced trend in left scrotum and surrounds the membranous and anterior urethra. Bilateral inguinal lymph nodes with a maximum size of 21/14 mm on the right side and bilateral external iliac with a maximum size of 17/10 mm (right sided). No focal lesions in the bone structure scanned (Figure 2).

On November 10, 2011, an extensive penoscrotal tumor ablation was performed en block with right orchiectomy and perineal urethrostomy (Figure 3).

The pathological examination of the surgical specimen was inconclusive, unable to differentiate between

anaplastic carcinoma and chronic granulomatous inflammation. The immunohistochemistry revealed the presence of epithelioid cell granuloma with Langhan's giant cells and PCR confirmed the diagnosis of penile tuberculosis (Figure 4).

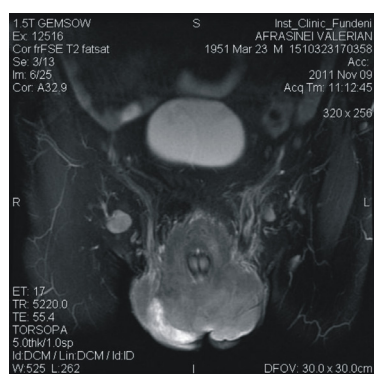


Figure 2 – Coronal section in T2-WI, frFSE fat sat – bilateral inguinal lymph nodes and a scrotal tumor that invades the soft tissues adjacent to the lining of the scrotum, with an apparent invasion of the sheath of both corpus cavernosum and corpus spongiosum.

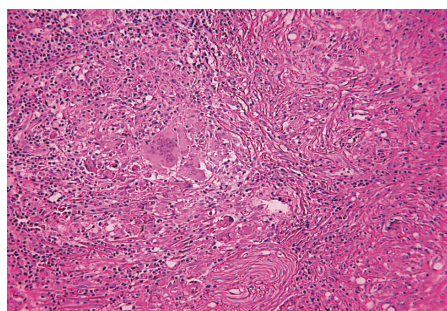


Figure 4 – Atypical chronic granulomatous inflammation with no caseation necrosis (possible anaplastic carcinoma) MGG staining (ob. 10×).

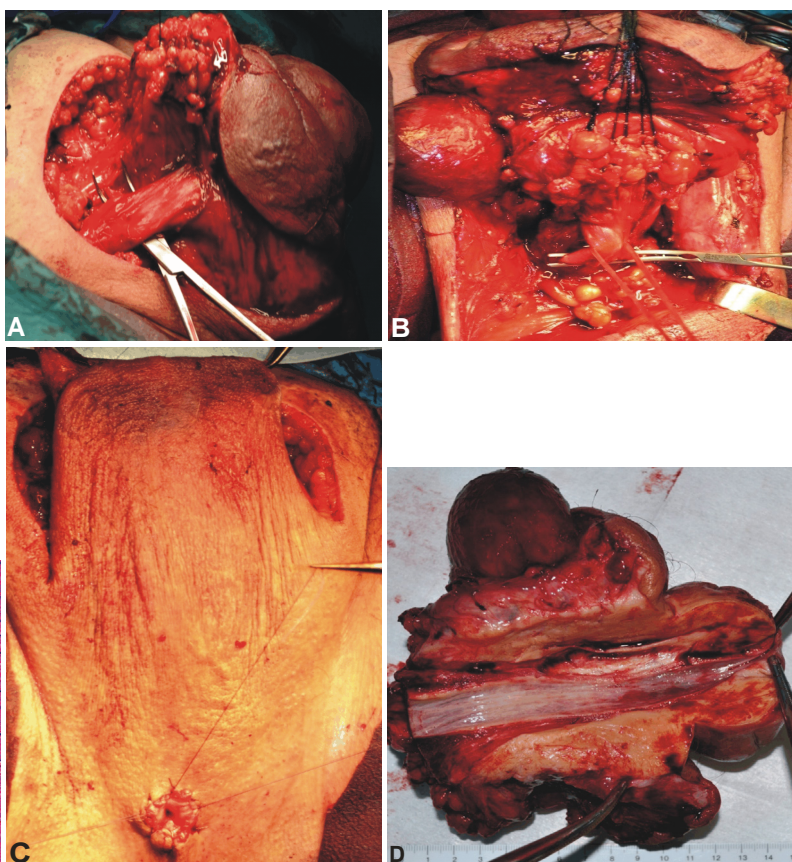


Figure 3 – (A) Isolation of right testicular funiculum; (B) Isolation and ligation of the urethra and corpus spongiosum; (C) Final aspect and perineal urethrostomy; (D) Longitudinal section through the penile urethra.

Anesthetic aspects

The patient was a healthy 60-year-old man with no significant medical history, with an *American Society of Anesthesiologists* physical status Class II (ASA II) [5]. He had a previously general anesthesia with no reported incidents. Preoperative assessment: blood pressure 125/79 mmHg, heart rate (HR) 75 bpm and hematocrit (Hct) was 43%. Preoperative renal and liver functions were in normal range. The patient received an epidural anesthesia combined with a balanced general anesthesia.

Description of the regional technique

After standard anesthesia monitors were applied, sedation with intravenous Fentanyl citrate and Midazolam (maximum 100 µg and 2 mg, respectively) and fluid bolus (10 mL/kg lactated Ringer's solution) were administered. With the patient in the lateral position, the lumbar region was prepared and draped in a sterile fashion and 1% Lidocaine infiltrated subcutaneously in one of the lumbar interspaces between the second and fifth vertebral bodies. The epidural space was identified with the loss of resistance

Treatment was commenced with Isoniazid (300 mg/day), Rifampicin (600 mg/day), Pyrazinamide (1.5 g/day) and Pyridoxine (40 mg/day) for two months, followed by Isoniazid and Rifampicin for a further four months.

to air technique at that level. The puncture was performed with an 18-gauge epidural needle. After negative aspiration for cerebrospinal fluid or blood, the patient was placed in the horizontal supine position. Motor strength was assessed in both legs using the modified Bromage scale [6]. Ropivacaine 0.75% (Naropin) without fentanyl was administrated slowly at a rate of 2–3 mL/h through the catheter [7].

Description of general anesthesia and intra-operative management

After peroxygenation, balanced general anesthesia was induced with sodium thiopental (2–3 mg/kg), fentanyl (2 µg/kg), Succinylcholine (1 mg/kg) and the patient was orotracheally intubated. Anesthesia was maintained with Atracurium (0.5 mg/kg), Isoflurane (2.5/3% end-tidal), O₂ (50% inspired) and Fentanyl intravenous 0.5 µg/kg [8].

Hypotension (decrease in systolic blood pressure by more than 30% of the preanesthetic value) was treated by administering Ephedrine 5 mg i.v. and crystalloid fluids; bradycardia (<55 bpm) was treated by administering 0.5 mg of Atropine i.v.

Over the operation, the mean arterial pressure (MAP) ranged from 80–85 mmHg, the HR 65–70 bpm, end-tidal CO₂ levels were 35–40 mmHg. Intravenous fluids therapy consisted of lactated Ringer's solution. After skin closure, the patient was then extubated and transported in the recovery room awake.

Postoperative considerations

Management in the post-anesthesia recovery room included supplemental oxygen when needed to maintain oxygen saturation >96%, Droperidol for prevention of nausea (<1 mg intravenously), hemodynamic monitoring [9]. Postoperative pain management included Ropivacaine 0.25% with 2 µg Fentanyl administered at a rate of 4–6 mL/h through the epidural catheter for 48 hours and Perfalgan 1 g/6 hours i.v.

Discussion

There have been isolated reports of tuberculosis of the penis in the world literature [1–4, 10, 11]. Although this clinical entity is relatively rare worldwide, its true incidence is unknown. Even in countries with a high prevalence of tuberculosis, it has been rarely reported. It can occur as an extrapulmonary or primary disseminated tuberculosis or as a primary lesion after sexual contact with female genital disease [12]. In the present case, there was no history of primary tuberculosis and no known contact with persons with active disease.

There have been reports of amputation of penis for non-tumoral lesions, which preoperatively raised a high index of suspicion for penile cancer [13]. It is, therefore, suggested that the tuberculosis etiology should always be included in the differential diagnosis of penile tumors, by performing a preoperative biopsy to confirm the cancer [4, 9]. In this case, the biopsy was not performed because the anatomical structures were severely altered due to the previous interventions. Not having a preoperative diagnosis of malignancy, the magnitude of tissue excision must be balanced with the severity of the primary lesion.

The available imaging tests do not always allow us to have a certain preoperative diagnosis, even in a case with large, bulky lesions. Even the macroscopic appearance of surgical specimen suggested a tumoral lesion (macro-nodular sarcomatous with infiltrative pattern in the peno-scrotal structures) (Figure 3D). The presence of positive lymph nodes on the pelvic MRI should not be considered a mark of malignancy as long as the inflammatory process caused by previous interventions was considerable.

Although there is little evidence reported about specific analgesic conduit in this area and knowledge of these aspects encountered during hospitalization allows the anesthesiologist to select appropriate systemic analgesics and regional blocks in order to provide safe and effective pain relief [6].

Perioperative epidural anesthetic technique is associated with a small but significant decrease in duration of hospital stay and provides a faster social reintegration [7].

Any surgery that involves penile excision is always associated with high morbidity and has a deep impact on the psychology of the patient [14]. Counseling and support provided to these patients is of utmost importance. In this way, we can improve the quality of life after the treatment. It is well known that patients who are subjected to partial or total penectomy suffer mental distress, depression and feelings of grief or despair [14–16]. From anesthesiologist's perspective, the use of epidural anesthesia provides better control of postoperative pain, which facilitates the recovery after total penectomy [7, 8].

Conclusions

Tuberculosis of penis is a very rare clinical entity and proper differential diagnosis is necessary in order to ensure the correct surgical treatment. Penile excisions are associated with a deep psychological impact and counseling the patients is of utmost importance. The use of epidural anesthesia ensures a faster recovery and a better postoperative mental status.

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