

Rupture of the Deep Dorsal Vein of the Penis during Sexual Intercourse: About an Observation at the University Clinic of Urology-Andrology of the CNHU-HKM of Cotonou

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Abstract

Penile fracture is the most common injury to the penis. Rupture of the deep dorsal vein of the penis is rare and constitutes a false penile fracture. Its diagnosis is most often made intraoperatively in the absence of imaging. This article reports a case of rupture of the deep dorsal vein of the penis occurring during sexual intercourse, imitating penile fracture in a 42-year-old obese patient. He benefited from surgical exploration without prior imaging examination, given the emergency context. The postoperative course was simple, with the first satisfactory sexual intercourse at 2 months.

Keywords

Dorsal Vein Rupture, False Penile Fracture, Coital Accident

1. Introduction

Sexual traumas represent a diverse set of conditions, most of which are infrequently encountered in clinical practice. Among men, penile fracture is the most common cause [1]. On rare occasions, the rupture of the deep dorsal veins of the penis may present symptoms similar to those of a penile fracture. In these instances, diagnosis is typically achieved by ruling out penile fracture, often necessitating surgical

exploration due to its classification as a significant urological and andrological emergency [2]. Magnetic resonance imaging (MRI), non-invasive and painless, is the imaging modality of choice in the multiplanar evaluation of traumatic injuries of the penis in general, but this examination is often not possible in an emergency [3].

As far as we are aware, there have been no documented cases in West Africa, particularly in the Republic of Benin.

We present a case involving the rupture of the superficial dorsal vein of the penis, imitating penile fracture, treated at the University Clinic of Urology-Andrology at CNHU-HKM Cotonou.

2. Clinical Observation

A 42-year-old male patient was referred for the treatment of penile swelling and deformation that had developed over a period of 20 hours. The patient, who was inebriated, observed a flaccid penis without any audible cracking sound and noted swelling accompanied by mild pain following vaginal intercourse, which was not followed by ejaculation. His ability to urinate was intact, and there was no evidence of urethrorrhagia. Prior to being referred to the university clinic of urology and andrology at the Hubert Koutoukou Maga National University Hospital Center in Cotonou, Benin, the patient had sought consultation at a peripheral health center.

Upon examination, the patient appeared anxious and was classified as obese, with a Body Mass Index (BMI) of 30 kg/m². The examination of the external genitalia revealed a significant hematoma of the penis, extending towards the scrotum, with the glans being buried, and an eggplant-like deformation of the penis. No palpable defect was found in the corpora cavernosa, and the patient reported no pain.

The bursae exhibited an increase in non-painful volume with opaque transillumination. The testes were palpated and found to be unremarkable (**Figure 1**).

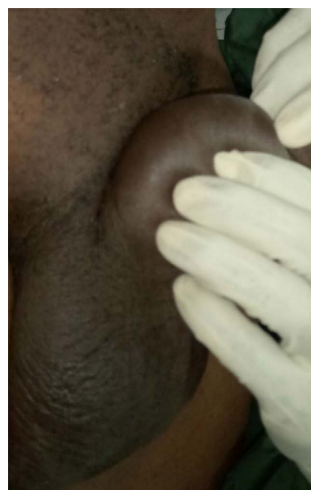


Figure 1. The engorged and misshapen rod.

Given these clinical elements suggesting either a penile fracture or a vascular lesion, urgent surgical exploration was indicated, given that paraclinical explorations could not be carried out in an emergency.

During exploration, the penis was swollen, with a hematoma located beneath Buck's fascia. After the evacuation of the hematoma, the tunica albuginea and erectile tissues were found to be intact. A complete transection of the deep dorsal vein of the penis, which was highly hemorrhagic, was identified. An end-to-end anastomosis attempt was not feasible due to retraction of the distal portion (**Figure 2**). Hemostasis was achieved through vascular ligation. An artificial erection was induced to verify the integrity of the erectile tissues. Postoperatively, the patient was administered anti-inflammatory suppositories, analgesics, and injectable antibiotic prophylaxis. The postoperative recovery was favorable, with a reduction in swelling (**Figure 3**).



Figure 2. Location of the rupture in the superficial dorsal vein.

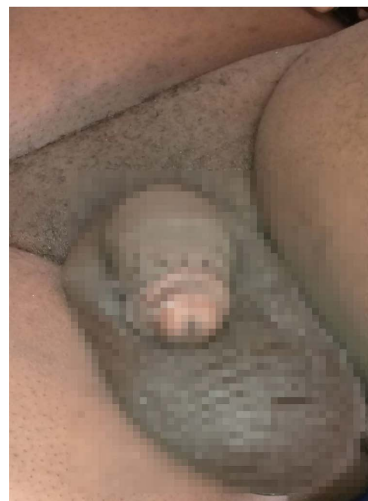


Figure 3. The condition was observed on the fourth day after surgery at the time of the initial dressing change.

The postoperative follow-up revealed no abnormalities; erectile function was preserved, and normal sexual intercourse resumed within two months. The penile Doppler ultrasound also indicated no abnormalities.

3. Discussion

Penile lesions are uncommon due to the organ's well-protected position and significant genital mobility [4]. During an erection, changes occur in the penile structure, including the engorgement of the erectile bodies with blood, a thinning of the tunica albuginea from 2 mm to between 0.5 mm and 0.25 mm, and vessel stretching. Such changes make the tissue susceptible to injury if abnormal forces are exerted [5].

A penile fracture is the most commonly diagnosed sexual trauma, characterized by pain, hematoma, and bruising [6]. This typically occurs during sexual activity [7] or can result from self-inflicted actions, such as during masturbation [8]. It is rare in a flaccid state [9].

This condition is a urological emergency, with management reliant on an accurate initial diagnosis based on the event's history, a comprehensive physical examination, and radiological techniques such as cavernosography, magnetic resonance imaging, and urethrography [6]. Surgical repair is urgently required for tears of the corpora cavernosa. However, conditions such as a false fracture, rupture of the superficial or deep dorsal vein, and non-specific bleeding of the dartos fascia can mimic a genuine albuginea injury [10] [11]. Additionally, an injury to the deep dorsal artery beneath Buck's fascia can resemble an albuginea lesion [12]. Each of these conditions leads to hematoma formation due to blunt trauma at the site of a vascular injury [6].

The rupture of the dorsal vein of the penis is an uncommon condition rarely observed in clinical consultations. Typically, its symptoms do not include the characteristic "cracking" sound or immediate detumescence. Clinically, it may be indistinguishable from an actual penile fracture [13]. In the case of this particular patient, the initial diagnosis did not suggest a rupture of the dorsal vein of the penis, despite the absence of symptoms commonly associated with tunic lesions, such as a "cracking" sound, rapid detumescence, severe pain, or expanding hematoma, and the lack of imaging.

Although large cohort studies on dorsal vein rupture are scarce, Bar-Yosef *et al.* [14] documented their findings with nine patients, proposing that circumcision might pose a risk factor for dorsal vein rupture due to the stretching of penile skin during sexual activity. Our patient was circumcised and had consumed alcohol during sexual intercourse, which may have contributed to his injury; in addition, he was diabetic.

In the presence of penile edema, the differential diagnosis might include Mondor's disease, a rare condition characterized by superficial venous thrombosis (subcutaneous veins) [15], which is spontaneously regressive and presents as an indurated, painful venous cord accompanied by edema of the prepuce and penile

sheath [1].

The patient received immediate surgical intervention without prior radiological assessment. The subcoronal approach to undressing the penis offers, in this case, a better exploratory view of the hematoma and lesions, as reported in the studies of Ngaguene and Coffin [16] [17].

According to the literature, conservative management is advisable only when there is certainty regarding the integrity of the cavernous bodies [18]. It is important to note that venous tears may resolve without surgical intervention; however, arterial or tunica injuries necessitate surgical exploration as the primary treatment approach [6]. While conservative treatment might be suitable for managing dorsal vein ruptures, an accurate diagnosis should be confirmed through surgical intervention, which also facilitates vessel ligation, prevents hematoma development, and uncovers any concurrent injuries [13].

The prognosis following this surgical procedure is excellent. Typically, there are no significant early or late complications, such as penile pain during sexual activity or erectile dysfunction.

4. Conclusion

Diagnosis of the rupture of the deep dorsal vein of the penis is established by ruling out the rupture of the corpora cavernosa, either through surgical exploration or diagnostic investigations. This is an exceedingly rare condition that represents a pseudo-fracture of the penis. Confirmation of the diagnosis can be achieved through cavernosography and/or MRI. In such cases, a conservative treatment approach is recommended.

Ethical Considerations

With the patient's consent, the study was conducted in strict compliance with ethical guidelines. Confidentiality and anonymity were guaranteed.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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