

## Isolated rupture of the superficial dorsal vein of the penis during intercourse: A rare cause of false penile fracture

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### ARTICLE INFO

#### Keywords:

Superficial dorsal vein rupture  
Penile fracture  
Penile trauma  
Coital injury

### ABSTRACT

Superficial dorsal vein rupture is a rare penile emergency, its presentation could suggest penile fracture instead. While penile fractures are a true emergency, superficial dorsal vein rupture is not as the consequences for the patient are different and loss of erectile function is rare.

Herein we report the case of a 49-year-old man who presented with acute ecchymosis and swollen appearing after sexual intercourse and suggesting penile fracture, and whom surgical exploration found a tear of the superficial dorsal vein. For which a ligation was accomplished.

The prognosis was excellent. The patient reported maintained erectile function.

### Introduction

Penile emergencies are rare and can be traumatic, vascular or infectious, requiring accurate diagnosis and rapid management adapted to the cause.

One of the traumatic penile vascular emergencies, is the rupture of the superficial dorsal vein of the penis, which is rare occurrence with only a few cases reported in the literature; and whose clinical picture can mimic that of a fracture of corpus cavernosum the penis, in such case the diagnosis can be confirmed by surgical exploration.

We report the case of a 49-year-old man with a clinical presentation suggesting a penile fracture, and whose surgical exploration found a rupture of the superficial dorsal vein of the penis instead.

#### Presentation of the case

A 49-year-old male with no medical history was admitted to the Emergency Department for bruising with swelling of the rod of sudden onset during intercourse, 4 hours prior to admission; clinical history did not find any audible cracking or immediate detumescence and the patient did not present any pain or acute urinary retention or urethrorragia.

The clinical examination found a bruise on the dorsal face of the penis with swelling without deviation (Fig. 1), there was no palpable hematoma and the appearance of the glans (circumcised) was normal

(Fig. 2). The ultrasound found Penile Soft Tissue infiltration without obvious hematoma, nor tear of albuginea. Surgical exploration was performed under rachianesthesia, with coronal incision and degantage of the penis, and found intact albuginea and urethra, the dorsal hematoma was evacuated showing a breach of the superficial dorsal vein at the 1/3 proximal-1/3 mean junction of the latter (Fig. 3).

The injured vein was ligated and the patient was given analgesic treatment and abstinence for 4 weeks.

The control carried out at day 10 has found satisfactory morning erections, the controls made at one month and 4 months find satisfactory erectile function: IIEF5 score at 21 at the 4th month vs 20 before the operation.

### Discussion

Coital lesions of the superficial dorsal vein of the penis are rare and are usually reported individually. The highest number (18 cases) was recorded by Bar-Yosef<sup>1</sup> where 9 of the 17 interventions performed for false fractures of the penis had recovered a rupture of the superficial dorsal vein.

The rupture of the superficial dorsal vein occurs following a brutal trauma on an erect penis; which is responsible for a laceration or a complete rupture of the vein; although there are not yet long series to study risk factors, some authors suggest that circumcision may be

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<https://doi.org/10.1016/j.eucr.2021.101761>

Received 3 June 2021; Received in revised form 22 June 2021; Accepted 24 June 2021

Available online 25 June 2021

2214-4420/© 2021 The Authors.

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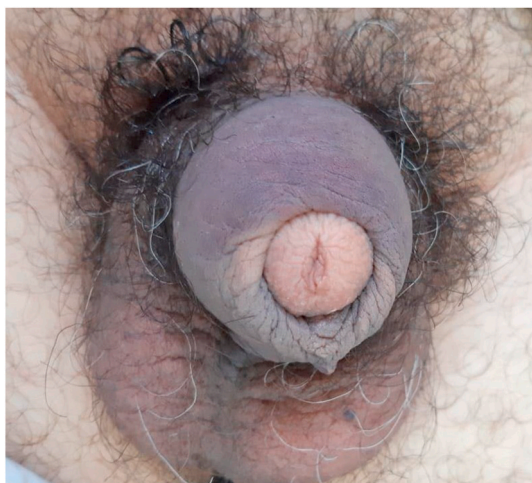


Fig. 1. The aspect of penile swelling without deviation.



Fig. 2. Physical examination showing edema and bruises at the base of the penis.

incriminated,<sup>1,2</sup> It is possible that the tauter penile skin in the circumcised male is a contributing factor to the high rate of venous tears, by causing the penile vasculature to be more vulnerable to injury<sup>1</sup> during intercourse.

Patients with a superficial dorsal vein rupture may have symptoms that mimic a penile fracture. However, the typical picture of the latter is quite distinct. Most patients with a fracture of the corpus cavernosum report hearing a “slam”, followed by pain, rapid detumescence, and later onset of edema with hematoma as well as a deviation of the penis.<sup>2,3</sup> However, patients with superficial dorsal vein rupture do not necessarily describe the classic ‘slam’ or rapid detumescence<sup>2</sup>; This was the case with our patient.

Patients with superficial dorsal vein rupture may have a bleeding of the ruptured vein with a dorsal swelling of the penis bound to the hematoma, which usually occurs within 24 hours of sexual intercourse. A very evocative sign is the ecchymosis in addition pubic and distal, this sign is due to the retraction of the proximal and distal segments of the ruptured vein; However this sign was absent in our patient, this can be explained by the fact that it was a breach of the vein and not a complete rupture, there was therefore no retraction of both ends and the ecchymosis was localized at the middle part of the penis.

Ultrasound may help locate the hematoma, but the accuracy of the results depends on the competence of the ultrasound specialist,<sup>4</sup> and

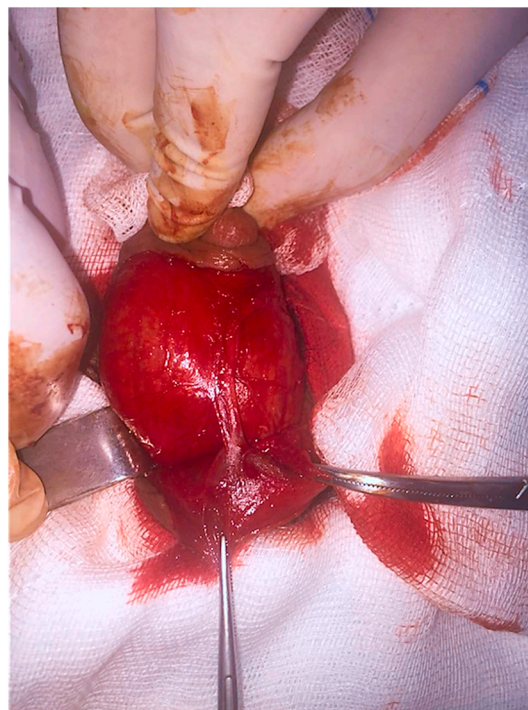


Fig. 3. Intraoperative image of the superficial dorsal vein breach of the penis.

even in case of diagnostic doubt the lack of visualization of a rupture of the albuginea does not formally eliminate a penile fracture, MRI gives the best results for soft tissue assessment, but it is expensive and unavailability limits its use.<sup>4</sup>

Venous ruptures can be resolved without surgery when the practitioner is certain that there is no lesion of the corpus cavernosum. This includes the use of compressive dressing, application of ice and analgesics; however arterial injuries or albuginea tunica rupture require surgical repair.<sup>1</sup> If in doubt, surgical exploration is required.

If surgical exploration finds an intact albuginea, logically, this suggests an unidentified vascular trauma; The location of the hematoma (above or below the Buck fascia) directs the diagnosis of the rupture site (superficial or deep dorsal vein).<sup>2</sup>

Surgical exploration, removal of the hematoma, and ligation of the injured vein were satisfactory and maintained erectile function in the majority of patients with uncomplicated venous lesions to date (1). This was also the case for our patient.

## Conclusion

Vascular injuries of the penis are rare accidents and can mimic penile fracture. Pain, swelling and bruising are symptoms in common with the penile fracture, but absence of cracking and rapid detumescence characterizes the superficial dorsal vein of the penis ruptures, a pathognomonic sign is the ecchymosis in pubic and distal.

In doubtful cases the use of ultrasound or MRI can be used to confirm the diagnosis although the sensitivity of ultrasound is low<sup>5</sup> and MRI is not always available.

Although conservative treatment is still possible, surgical exploration with removal of the hematoma and ligation of the vein remains the best therapeutic option.

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