Fracture penis: Ultrasonography in diagnosis of an under-reported urological emergency

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Area of Interest: Genital / Reproductive system male
Procedure: Diagnostic procedure
Imaging Technique: Ultrasound
Special Focus: Trauma
Case Type: Clinical Cases
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Patient: 22 years, male

Clinical History:

A 22-year-old man presented with acute-onset swelling of the penis, following an episode of bending the erect penis during sexual activity. A cracking sound was heard from the erect penis followed by pain and rapid detumescence following which he developed penile swelling and discoloration.

Imaging Findings:

Ultrasonography of the penile shaft showed evidence of rupture of corpora cavernosa on the left side, about 2 cm from the base of the penis with heterogenous echotexture haematoma within the Buck’s fascia. The Buck’s fascia was distended. A tear was seen in the tunica albuginea with extensive swelling and oedema in the subcutaneous tissues of the penis. Corpus spongiosum appeared normal.

Discussion:

Fracture of the penis is a urological emergency characterised by disruption of the tunica albuginea and rupture of the corpus cavernosum following blunt trauma to the erect penis [1, 2]. The corpus cavernosum is encased by tunica albuginea, a tough fibroelastic envelope which is stretched and thinned during erection. An angulating force applied to the erect penis can cause the tunica albuginea to tear and allow blood from the corpus cavernosum to leak out into the surrounding tissues producing a haematoma deep to the Buck’s fascia, which usually remains intact. When Buck’s fascia is also ruptured, blood may leak into the scrotum, perineum and lower abdominal wall leading to a ‘butterfly’ appearance of the perineum [3].

Intercourse and self-manipulation account for most cases of penile fracture [2]. The patient typically reports a snapping sound followed by immediate detumescence, severe pain, swelling and discoloration. The haematoma causes the penile shaft to deviate, resulting in an “Eggplant deformity”. The defect at the fracture site is often palpable as a firm mobile tender mass, where the penile skin can be rolled over the blood clot - “Rolling sign” [3].

History and physical examination are sufficient to make the diagnosis in most cases. However, urethreal rupture, penile vascular injury, Mondor’s disease, lymphangitis, rupture of suspensory ligament of the penis may require further investigations [1, 4].

Sonography is non-invasive, easily available and can be used to diagnose penile fracture. The tear is usually a unilateral transverse defect at the base of the penis [3]. Bilateral ruptures account for 2-10% of cases, and usually have associated urethral injury [2]. Ventral tears are common in coital injuries. Longitudinal tears are rare; if present...
is generally an extension of the transverse tear [1]. Retrograde urethrography is indicated when urethral injury is suspected [3]. Cavernosography may be used to localise the tear in difficult cases. However, it is invasive and complications include contrast reaction, fibrosis from extravasated contrast medium, infection and priapism [2, 3, 6]. Conservative treatments include compression bandages, ice packs, fibrinolytics, anti-inflammatory agents, sedatives and anti-androgens [2, 5, 6]. Despite this, long-term complication rates of approximately 30% are reported and include painful erections, penile angulation, AV fistulas, haematomas, abscess formation and impotence. Immediate surgical exploration and reconstruction is the current recommended treatment for penile fractures as it associated with improved outcome. Surgical repair involves evacuation of the haematoma, local debridement, identification and closure of the tunica laceration [6].

**Differential Diagnosis List:** Fractured penis, Urethral rupture, Penile vascular injury, Mondor’s disease, Lymphangitis of the penis, Rupture of suspensory ligament of the penis, Cellulitis / Infection

**Final Diagnosis:** Fractured penis

**References:**


Figure 1

Description: Swollen and deformed penile shaft with reddish discoloration. Origin: Dept. of Radiodiagnosis, Father Muller Medical College, Mangalore.
Description: Transverse ultrasonographic image of the penile shaft shows a tear in the tunica albuginea, with rupture of corpus cavernosum with contained haematoma in the Buck's fascia (arrows).

Origin: Dept. of Radiodiagnosis, Father Muller Medical College, Mangalore.
Description: Longitudinal ultrasound image of the penile shaft, showing the tear in the tunica albuginea (arrows) with rupture of the corpus cavernosum. Origin: Dept. of Radiodiagnosis, Father Muller Medical College, Mangalore.