4.5 Genital Trauma

4.5.1 ***Epidemiology, aetiology and pathophysiology***

Of all urological injuries, 33-66% involve the external genitalia [302]. Genital trauma is much more common in males than in females, especially between the ages of 15 and 40 years. This is due to anatomical differences, increased frequency of road traffic accidents and increased participation in physical sports, war and crime [303]. The risk of associated injuries to neighbouring organs (bladder, urethra, vagina, rectum, and bowel), after blunt trauma is higher in females than in males.

Genital trauma is commonly caused by blunt injuries (80%). In males, blunt genital trauma frequently occurs unilaterally with approximately 1% presenting as bilateral scrotal or testicular injuries [304]. Any kind of contact sport, without the use of protective aids, may be associated with genital trauma. Off-road cycling, motor biking (especially on motorbikes with a dominant petrol tank), rugby, football and hockey are all activities associated with blunt testicular trauma [305-308]. Penetrating injuries are most commonly caused by firearms (75.8%) with the majority requiring surgical intervention [309, 310].

Accidents during sexual intercourse can also cause genital trauma; men of younger age are the most affected. The major pathologies are penile fractures, strangulation, necrosis, and associated injuries from various sexual practices [311, 312].

The most important presentation of blunt penile trauma is penile fracture. The common causes are sexual intercourse, forced flexion (taqaandan), masturbation and rolling over [313]. It has also been reported that penile fracture patients have a significantly higher rate of substance abuse [314]. The usual mechanism of injury is when the penis slips out of the vagina and strikes against the symphysis pubis or perineum. Sixty per cent of cases occur during consensual intercourse [315], with penile fracture more likely in certain positions [316]. Penile fracture is caused by rupture of the cavernosal tunica albuginea and may be associated with subcutaneous haematoma and lesions of the corpus spongiosum or urethra in 10-22% [317-319].

Although animal bites are common, bites injuring the external genitalia are rare. Wounds are usually minor but have a risk of wound infection.

Gunshot injuries to the external genitalia are relatively uncommon and are usually not life-threatening; however, they can have a significant impact on quality of life. About 40-60% of all penetrating genito-urinary lesions involve the external genitalia [320, 321], 35% of these are gunshot wounds [304]. In a series of wartime injuries, the majority were caused by improvised explosive devices and other explosive ordinance, while smaller numbers of injuries were due to gunshot injuries [322]. In both males and females, penetrating injuries affect multiple organs in 70% of patients. In males, penetrating scrotal injuries affect both testes in 30% of cases compared with 1% in blunt injuries [304, 323]. Self-mutilation of the external genitalia has also been reported in psychotic patients [324]. Genital burns are rare in isolation and are usually due to industrial flames or chemicals [325]. Both male and female genital piercings increase the risk for genital trauma [326].

Traumatic dislocation of the testicle rarely occurs and is most common in victims of road traffic accidents [327-330]. Bilateral dislocation of the testes has been reported in up to 25% of cases [328]. Testicular rupture is found in approximately 50% of cases of direct blunt scrotal trauma [331, 332]. It may occur under intense compression of the testis against the inferior pubic ramus or symphysis, resulting in a rupture of the tunica albuginea. A force of approximately 50 kg is necessary to cause testicular rupture [333].

Coital injury of the female genital tract can happen during consensual sexual intercourse. Up to 35% of all genital injuries in women are sustained during their first sexual contact. The most frequently found injuries are lacerations [334]. Blunt trauma to the vulva is rarely reported and usually presents as a large haematoma. The incidence of traumatic vulvar haematomas after vaginal deliveries has been reported as one in 310 deliveries [335]. The presence of a vulvar haematoma is closely related to an increased risk of associated vaginal, pelvic, or abdominal injuries [336, 337]. Blunt injuries of the vulva and vagina are associated with pelvic trauma in 30%, after consensual intercourse in 25%, following sexual assault in 20%, and other blunt trauma in 15% [338].

4.5.2 ***Diagnostic evaluation***

Penile fracture is associated with a sudden cracking or popping sound, pain and immediate detumescence. Local swelling of the penile shaft develops quickly, due to enlarging haematoma [244]. Bleeding may spread along the fascial layers of the penile shaft and extend to the lower abdominal wall if Buck's fascia is also ruptured. Sometimes, the rupture of the tunica may be palpable. Failure to diagnose false penile fractures may lead to unnecessary operations. The absence of a cracking sound, slow detumescence, penile deviation, and ecchymosis of the shaft are highly sensitive signs for false penile fractures [339].