Bite wounds of genitalia: clinical presentation and management

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INTRODUCTION

The nature of local tissues and polymicrobial microbiology of bite wounds make genital bites a potentially morbid event. Time to presentation since trauma, severity of injury and the type of management have direct bearing on the outcome. A few small series (Wolf et al, 1993; Gomes et al, 2001) and case reports (Kyriakidis et al, 1979; Cummings and Boullier, 2000) of genital bites by different animals and human beings have been described in literature; however, the rarity of this type of trauma and the unfamiliarity of urologists in dealing with these patients makes it difficult to have a consensus on the management of these injuries.

This article describes two cases, one following a human bite and another following a dog bite, and reviews the literature. This review highlights the type of clinical presentation, the spectrum of severity of these injuries, management and the final outcome.

DISCUSSION

Approximately 1% of all emergency visits are caused by bite wounds despite epidemiological studies showing that half of all humans will be bitten either by an animal or another human being during their life time (Doan-Wiggins, 1988). The majority of these bites are minor and are never brought to medical attention, and hence are under reported. Among animal bites, 90% are dog bites. The prevalence of dog bite wounds is highest between 2 and 19 years of age. Threatening behaviour of children and lack of resistance are the probable precipitating factors. Occasionally, very old frail people are the victims as in case 2. Human bites are usually accidental, sports related or a result of sexual activity.

The most common sites of bite injuries are the upper extremity followed by the trunk. Genital bites from animal or human beings are rarely seen. In the literature 24 cases of dog bites and eight cases of penile human bites have been reported (*Table 1*). The victims may suffer from alcoholic intoxication, underlying neurological disease or psychiatric disorders. In this case the dog bite victim had severe dementia and was not aware of his injury, causing delay in the presentation. Embarrassment leads to delay in reporting of human bites, especially following sexual acts. The severity of injury varies from small abrasions to amputation of organ. Owing to the rare

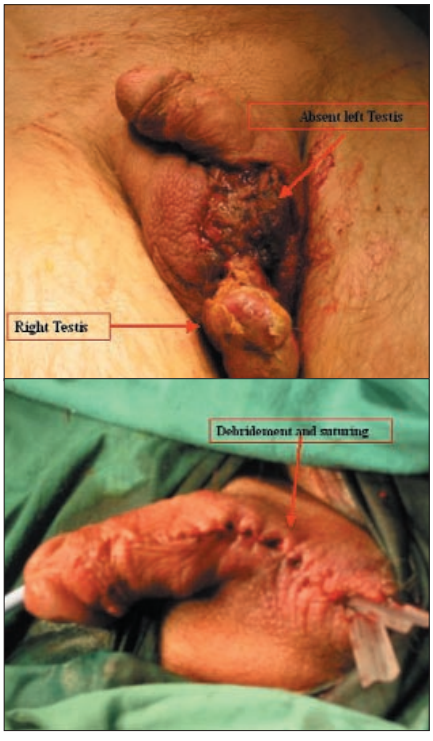
CASE REPORT 1

A 27-year-old man presented with a swollen penis 1 week after being bitten by his girlfriend during a sexual act. There were no associated urinary symptoms. Examination under anaesthesia revealed a severe inflamed prepuce with ulcers on the undersurface of the prepuce and purulent discharge. After taking pus for culture and sensitivity, circumcision was carried out under antibiotic cover. Pus culture showed growth of mixed anaerobes. The patient made an uneventful recovery and was discharged after 48 hours. Histology revealed multiple ulcers with infiltration of acute and chronic inflammatory cells in subcutaneous connective tissue.

CASE REPORT 2

A 72-year-old man with known dementia for many years was brought to the accident and emergency department with a history of dog bite in the scrotal area of 2 days' duration. He was a poor historian. Examination revealed severe scrotal laceration with loss of the left testis (*Figure 1a*). The right testis was infected and necrotic. The wound was debrided. Right orchidectomy was carried out with excision of right and remaining portion of left cord. After thorough cleaning, the wound was approximated with loose sutures (*Figure 1b*). He made an uneventful recovery, and was discharged after the 10th postoperative day.

Figure 1. a. Absent left testis and necrotic right testis following dog bite (arrows). b. Sutured wound following right orchidectomy and debridement (arrow). Note loose suturing and drains.



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nature of these injuries, no large series have been reported in the literature.

Bite wounds are notorious for their risk of infections. Dog bites are polymicrobial with a mean of 2.8–3.6 bacterial species isolated per wound culture, including anaerobes (Griego et al, 1995). *Pasteurrella multocida* is a small facultative anaerobic gram-negative cocci-bacillus found in 50–66% of dog bites. This causes intense inflammation in 70% of wounds within 24 hours and 90% in 48 hours. The bacteriology of human bites is more complex. There are more than 42 different species of bacteria in normal human mouth, which increases significantly in the presence of gingivitis or periodontitis. Mixed organisms are cultured from bite wounds as seen in the patient in case 1. Moreover, transmission of herpes, hepatitis and human immunodeficiency virus (HIV) infections has been reported following human bites (Kour et al, 2002).

Presentation of genital bites by dogs range from small abrasions to severe amputation wounds (penile or testicular) (*Table 1*) (Donovan and Kaplan, 1989; Piza-Katzer and Latal, 1989; Wolf et al, 1992; Rosen and Conrad, 1999). The management of these injuries depends upon the severity of injuries and varies from centre to centre, even within the same institution. Human bites usually present as ulcers (Kour et al, 2002), less commonly as infected wounds or abscesses with or without inguinal lymphadenopathy.

CONCLUSIONS

The spectrum of clinical presentation of genitalia bite wounds range from a small ulcer to organ avulsion, requiring conservative management to complex reconstructive surgery. Early reporting, use of antibiotics and adherence to basic surgical principles will help achieve an optimal outcome. HM

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TABLE 1.
Literature review of bite wounds to the genitalia

Reference	No. of cases	Age (years)	Animal/ human	Time to presentation	Severity of injury	Surgical management	Outcome
Gomes et al (2001)	10	5–46	Dog	1.5–48 hours	Laceration Testicular avulsion Penile amputation	Primary closure with or without skin flaps Testicular prosthesis Perineal urethrostomy	Uneventful to feminizing genitoplasty
Cummings and Boullier (2000)	7	5–36	Dog	NA	Lacerations	Primary closure	Uneventful
Wolf et al (1993)	4	3 weeks–42	Dog	NA	Laceration Puncture wounds Testicular avulsion	Primary closure	Uneventful
Kyriakidis et al (1979)	1	NA	Dog	NA	Partial glans amputation		
Donovan and Kaplan (1989)	2	NA	Dog	NA	Amputation Skin avulsion Cord amputation	Debridement Skin grafting	
Piza-Katzer and Latal (1989)	1	1	Dog	NA	Penile skin avulsion	Primary closure	Uneventful
Present case	1	72	Dog	48 hours	Scrotal laceration Testicular avulsion Testicular infarction	Debridement Orchidectomy and primary closure	Uneventful
Kour et al (2002)	1	35	Human	3–4 days	Ulcer on glans	Oral antibiotics	Healed completely
Rosen and Conrad (1999)	1	66	Human	5 days	Ulcer on coronal sulcus	Oral antibiotics	Healed completely
Wolf et al (1992)	4	NA	Human	48 hours–6 weeks	Ulcer	Oral antibiotics Local debridement and delayed split thickness grafting	Uneventful
Losanoff et al (2001)	1	NA	Human		Ulcer	Oral antibiotics	Uneventful
Present case	1	30	Human	1 week	Acute swollen distal penis	Circumcision and antibiotics	Uneventful

NA = not available