Penile Injuries In Lagos State University Teaching Hospital Ikeja: A 7-year Experience

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ABSTRACT

BACKGROUND

Injuries to the penis are not frequent events and usually not life threatening.
However, they may be associated with significant long term psychological and functional impairment. This study elucidates the clinical spectrum of penile injuries in the Lagos State University Teaching Hospital and how they were managed.

METHODS

This was a 7-year retzrospective study of all cases of penile injury managed in the Urology unit of a teaching hospital in South West Nigeria; between February 2006 and
January 2012.

RESULTS

There were 50 cases of penile injury, with the age range between 4 weeks to
49 years and an average age of 12.1 years. Circumcision and sex-related causes accounted for 76% and 18% of the injuries respectively, while occupation and ritual-related causes accounted for 2% each.
Urethro-cutaneous fistula (n=22, 44%), penile fracture (n=9, 18%) and penile
amputation (n=5,10%) were the commonest injury types. All the cases were managed operatively.

CONCLUSION

Circumcision was the leading cause of penile injury in this study. Mass
education of all categories of circumcisers on safe circumcision practices would be desirable.

INTRODUCTION

In Africa, the penis is not only seen as an organ of procreation and pleasure, it is also an instrument' that engenders family cohesion. Incidentally, injury to the penis is not a frequent occurence. It is usually able to avoid direct injury from external forces due to its mobility and relatively protected position between the thighs and the pubic bone. Penile injuries accounted for 5% of urological injuries in the Vietnamese war.[1] In a report from Scotland,

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1.5% of urological injuries were traumatic; with 20% resulting in damage to the external genitalia.[2] There is wide disparity in the causes of penile injuries. In the past, accidents with power -farm-machinery were the most common causes of genital injuries in developed countries.[3]

In Nigeria, common causes are workplace-related, ritualistic and sex- related injuries; in addition to the age-long circumcision mishaps.

Though injuries to the penis are usually not life threatening, prompt assessment and treatment must be instituted whenever they occur; so as to avoid long term psychological and functional impairment.

Many studies[4-7] have documented urological injuries but reports on penile injuries in our environment are rare. This study aims at elucidating the clinical spectrum of penile injuries seen in Lagos State University Teaching Hospital and how they were managed.

PATIENTS AND METHODS

Medical records of all patients with penile injuries seen and operated by the Urology unit between February 2006 and January 2012 were retrospectively studied. Patients with penile injury following burns were excluded as these cases were managed by the burns and plastic surgery division of the hospital.

Information obtained included the demographics, mode of presentation, aetiology of injury, type of injury and treatment modalities. The data were subsequently analyzed using Statistical Package for Social Science 15.0 .

RESULTS

Of the 62 patients treated, 50 cases (81%) were available for analysis. The age range of the analyzed cases was between 4 weeks to 49 years; with an average of 12.1 years. There was considerable variation in the mean age at presentation for each type of penile injury. The mean age at presentation for urethro-cutaneous fistula (UCF), Penile amputation (PA) and penile fracture (PF) were 4.7 years, 23.2 years and 35.3 years respectively.

Circumcision was the most common cause of penile injury in this study. It accounted for 76% (38) of the cases. All the cases of penile fracture followed sexual acts; while occupation-related injury, ritual-related injury, and gunshot injury were responsible for 6% (3) of the cases of penile amputation. There was no case of hyper-religiousity -related nor zippers injury.

[TABLE1].

The most frequent injury type was UCF (n=22, 44%). Most of the circumcision procedures (n=9, 40.9%) were performed by the nurses; while doctors and traditional birth attendants (TBA) were responsible for 8 (36.4%) and 5 (22.7%) of the procedures respectively. This was followed by penile fracture (n=9,18%). Penile amputation, meatal stenosis and cutaneous laceration accounted for 5(10%), 8(16%) and 5(10%) of cases respectively.

Among the cases of penile fracture, 5(55.6%) were sexual intercourse-related while 4(44.4%) were precipitated by forceful flexion of the penis following early morning erection as the patients

attempted to tuck the erect penis into their underwear. Tears in the tunica albuginea were commoner on the right (n=5,55.6%) than the left (n=4,44.4%).

There were 5 cases (10%) of penile amputations, due to diverse causes such as workplace related (n=1,20%), ritual-related (n=1,20%), circumcision mishap (n=2,40%) and gunshot injury (n=1,20%). Three of these cases were complete; while the other two were partial glanular amputation.

Other penile injuries recorded were mainly circumcision-related. These included meatal stenosis (n=8, 16%) and cutaneous laceration (n=5,10%).

Treatment modalities were also variable depending on the injury type. All patients with PF (n=9, 18%) had penile exploration and repair of the rent in the tunica albuginea with Vicryl 0 suture while cases of UCF (n=22, 44%) had fistular repair. Macroscopic penile re-implantation was carried out in 3 cases (6%) and penile stump wound care and re-fashioning in 2 patients who were not candidates for re-implantation. Eight of the patients (16%), who had meatal stenosis were offered meatomy; while those with penile skin laceration (n=5,10%) had delayed primary closure.

TABLE 1: **SPECTRUM OF INJURIES**

TYPE OF INJURY	**NUMBER**	**%**
Penile amputation	5	10
Penile fracture	9	18
Avulsion injury	1	2
Urethrocutaneous fistula	22	44
Meatal stenosis	8	16
Cutaneous laceration	5	10
TOTAL	50	100

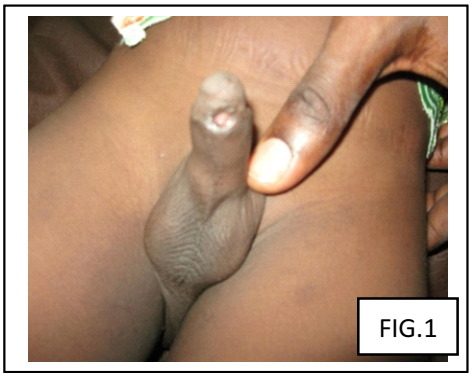


FIG.1

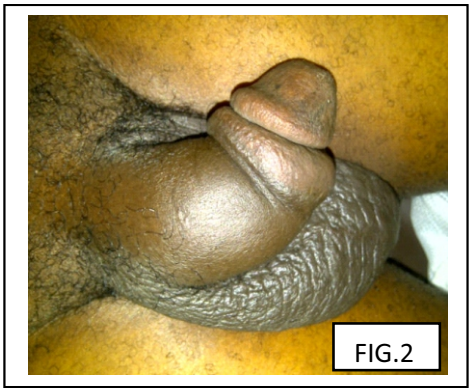
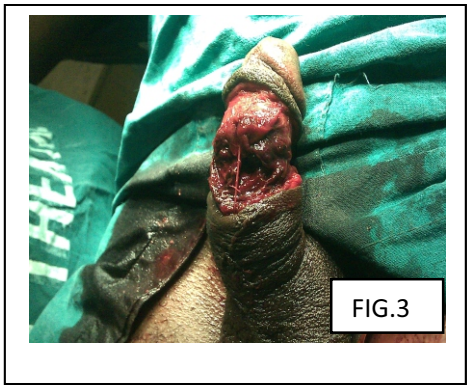


FIG.2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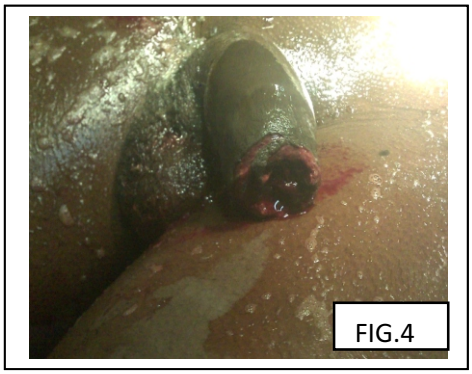
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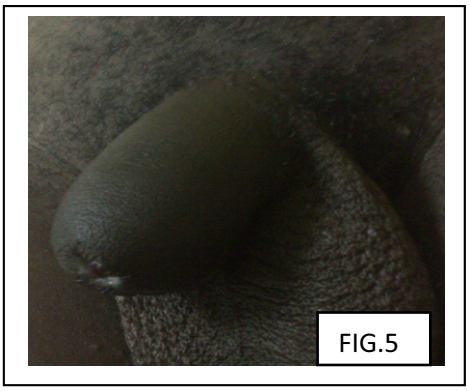
FIG.5

DISCUSSION

Although, there is wide disparity in the causes of penile injuries, the predominant aetiologic factor in this study was circumcision-related penile injury; accounting for 76% of cases. This is a sharp contrast to findings in Zaria[7], Lagos[8] and developed countries[3] where road traffic accident and gunshot-related injuries predominated. Other penile injuries were related to sex (18%), and workplace (2%).

Post-circumcision UCF was the commonest injury type in this study. This has been explained by various mechanisms, one of which is a deeply placed suture at the frenulum, in an attempt to secure haemostasis; resulting in the strangulation and necrosis of part of the urethral wall. A fistula may also develop as a result of sepsis, or from an unrecognized rare urethral anomaly such as megaurethra, or from clamp devices which could crush part of the urethra if wrongly applied. The patients were referred to the study centre in a mean time of 2.9 years; with leakage of urine through abnormal openings on the ventral aspect of the penis; which is distinct from the normal external meatus (FIG.1). This delay in presentation was also reported elsewhere.[9] All the fistulae were repaired by multilayered closure. Urinary diversions were ensured in selected cases of wide fistulae.

Penile fractures represented 17.6% (n=9) of the penile injuries seen in this study. This is the highest in the reported case series in Nigeria.[10-11] However, a large study documented 172 cases from a single centre in Iran.[12] This study found that most of the cases of penile fracture (55.6%) were intercourse-related.

Vigorous sexual intercourse was also found to be responsible in 30-50% of cases of penile fracture in the western world.[10] However, penile manipulations at masturbation accounted for most cases of penile fracture in the middle-east.[10,12-13] The diagnosis of penile fracture is commonly based on the usual clinical features of the patient hearing a 'click' sound, immediate detumescence, pain and penile shaft deformity (aubergine sign) (FIG.2). None of the patients had cavernosography, ultrasonography nor MRI for diagnosis of penile fracture as documented in other studies.[14-15] The patients presented in a mean time of 5.2 hours and all had immediate penile exploration, evacuation of haematoma and repair of the rent in the tunica albuginea as recommended by W.H.O.[16]The tears in the tunica albuginea were commoner on the right (55.6%) than the left (44.4%) (FIG.3).

In the past, treatment of PF included splinting the penis, warm compresses and use of anti-inflammatory drugs.

However, the long-term sequelae of conservative management could include significant complications such as chordee, erectile dysfunction and arteriovenous fistula.[17-18]

This study showed that amputation of the penis accounted for 10% (n=5) of cases, 3 of which were complete while 2 were partial amputation. These resulted from different aetiologies.

FIG.4 is an intra-operative picture of a 22-year-old man with amputated penis from a printing machine. The patient who was working nude in a hot dark room got his penile shaft caught up in the machine which had a faulty protective guard. The other causes of amputation were GSI, circumcision and ritual-related injuries.

The management of the amputated penis was quite challenging in our setting. Currently, microscopic penile re-implantation is advocated.[19-22] This involves meticulous microsurgery to reduce skin, urethral and graft loss. Three of the patients had macroscopic penile re-implantation with good functional and cosmetically acceptable external genitalia (FIG.5), as reported in other studies.[19] The other two had penile stump wound care and penile skin refashioning.

The cases of meatal stenoses were as a result of circumcision mishaps where the circumciser overzealously probed the external urethral meatus. This often heals by fibrosis, leaving a stenosed meatus. These accounted for 16% (n=8) of cases in this study. Patients presented at a mean duration of 2.4 years with poor urinary stream and examination revealed a pin-hole meatus. They all had meatotomy as a day case.

The 5 cases (10%) of post-circumcision cutaneous lacerations were sutured with satisfactory outcome.

CONCLUSION

The care of penile injuries is challenging to surgeons due to the unique anatomy and functions of
the penis. This must be prompt and thorough as no man wants to lose his penile function.

Circumcision injuries, the leading cause of penile injuries in this study, can be prevented by mass education of all categories of circumcisers on safe circumcision practices.

REFERENCES

1. Selikowitz SM. Penetrating high velocity genito-urinary injuries: statistics, mechanisms and renal injuries. Urology 1977;9:371—6.
2. Boriol SB, Stewart GD, Smith RD, et al. An analysis of urinary tract trauma in Scotland: impact on management and resource needs. Surgeon 2005;3:27—30.
3. McAninch JW. Management of genital skin loss. Urol Clin N Am 1989;16:387—97.
4. Shittu BO. Urologic trauma in Nigeria. Afr J Trauma 2003;1: 30—4.
5. Mbibu NH, Khalid L, Maitama HY, et al. The pattern of urogenital trauma in the Ahmadu Bello University Teaching Hospital, Zaria, Nigeria: a 10-year study. Niger J Surg Res 1999;1:25—30.
6. Osegbe DN, Okeke ON, Ukpong AE, et al. Genital injuries in civil urban population. Lagos J Surg 1999;2:3—10.
7. Ahmed A , Mbibu N.H. Aetiology and management of injuries to male external genitalia in Nigeria. Injury, Int. J. Care Injured (2008) 39, 128—133
8. Afolayan M.O, Tijani K.H, Adetayo F.O, Mofikoya B.O, Jeje E.A, Ogunleye E.O, and Ogunjimi O.A. Genito-urinary system injuries in Lagos: Pattern and general treatment outcome Nig.Qt J.Hosp.Med.VOL. 20(1) Jan.-March,2010
9. Osifo OD, Oriaifo IA : Circumcision mishaps in Nigerian children. Annals of African Medicine 2009;8:4:266-270
10. Eke, N. (2002) Fracture of the penis. *Br. J. Surg*. 89(5), 555–565.
11. Ugwu BT, Yiltok SJ, Uba AF, Abdulmajid UF. Fracture of the penis--a rare injury on the Jos Plateau, Nigeria.
12. Zargooshi, J. (2000) Penile fracture in Kermanshah, Iran: report of 172 cases. *J. Urol*. 164(2), 364–366.
13. El–Sherif, A.E., Daulah, M., Allowneh, N., et al. (1991) Management of fracture of the penis in Qatar. *Br. J. Urol*. 68, 622–625
14. Ruckle, H. C., Hadley, H. R. and Lui, P. D.: Fracture of the penis: diagnosis and management. Urology, 40: 33, 1992
15. Mydlo, J. H., Hayyeri, M. and Macchia, R. J.: Urethrography and cavernosography imaging in a small series of penile fractures:a comparison with surgical findings. Urology, **51:** 616, 1998
16. Van Der Horst, C., Martinez, F.J., Bannowsky, A., et al. (2003) Penile fractures: controversy over surgical or conservative treatment. *BJU Int*. 92, 349–350.
17. Pryor, J. P., Hill, J. T., Packham, D. A. and Yates-Bell, A. J.: Penile injuries with particular reference to injury to the erectile tissue. Br J Urol, 53: 42, 1981
18. Morris, S. B., Miller, M. A. and Anson, K.: Management of penile fracture. J R Soc Med, 91: 427, 1998
19. Jezior JR, Brady JD, Schlossberg SM. Management of penile amputation injuries. World J Surg 2001;25:1602—5.

20. Tamai S, Nakamura Y, Motomiya Y (1977) Microsurgical replantation of a completely amputated penis and scrotum. Plast Reconstr Surg 60:287
21. Fuller A, Bolt J, Carney B. Successful microsurgical penile replantation after a workplace injury. Urol Int. 2007; 78:10-2.
22. Babaei AR, Safarinejad MR (2007) Penile replantation, science or myth? A systematic review. Urol J 4:62–65