GENITAL INJURIES IN CIVIL URBAN POPULATION

OSEGBE, D.N, EKEKE,O.N, UKPONG,A.E, ADEGBOLA,O, KANU O.O, OGUNBAMISE,O.O.
Urology Unit, Department of Surgery ,College of Medicine, University of Lagos.

Abstract

To assess the pattern of genital injuries in an urban Nigeria population, 34 evaluable patients managed in our service in the past 5 years were studied. The patients were young and there was a strong male preponderance (16:1). The injury mechanism was penetrating and gunshot by armed robbers inflicted complex and severe injuries. Injury to hospital time and injury to intervention time in hospital were prolonged in many. Circumcision related penile injury followed by armed robbery gunshot topped the chart of aetiology. Infection at 63% was a major source of high morbidity and prolonged hospital stay. Gunshot wounds were managed by extensive debridement and delayed primary suturing. The testes were explored in all violent injuries to the scrotum. Fractured penis was treated by immediate penile degloving and suturing of the breach in tunica albuginea with restoration of erection. Penile amputations, managed by naked eye re-apposition failed. Orchidectomy was performed for shattered testis. Only one patient required blood transfusion. Associated injuries were common and urethral damage ranked highest. One death occurred but this was not owing to genital injury per se. Genital injury is uncommon but will rise with increasing violence in civil society. Early, and expert intervention hold the key to satisfactory outcome.

Key Words: Genital Injuries

Introduction

In normal situations, the genitalia in both sexes are heavily clad and hidden and are therefore protected from injuries. Apart from bizarre literature accounts of penile mutilation by jealous housewives on their unfaithful husbands or of auto penile amputation by psychotic patients genital injuries are rare in the civil society[1, 2, 3].

In the past one year or so, we have witnessed a disturbing upsurge of violent genital trauma and we have therefore decided to document our recent experience. Two case presentations of testicle losses consequent on violent injuries are followed by an account of our management style and problems encountered.

Case Presentation

Case 1: At 8.00p.m on the 19th of May, 1999 Mr.O. P. a 55 year old driver was shot by armed robbers. He was shot from a distance of about 2 metres with a locally made handgun from his front. He sustained injuries to his scrotum and left thigh. He did not lose consciousness and blood loss was moderate. He was also unable to walk and was routed via another hospital to our service and arrived 2 1/2 hours after the trauma. He was married and has 4 children but his wife had died 4 years ago.

At presentation he was found to be in shock, his purse rate was 112 per minutes. His external genitalia showed abrasions on the dorsum of the penis, extensive scrotal laceration with evisceration of the testis and epididymides and bilateral laceration of the tunica albuginea. He also had multiple puncture wound on his left upper thigh anteriorly but the femoral pulse was present. No fractures of the bones was noted. He was immediately treated in the Accident and Emergency Department with intravenous fluids, antibiotics, and tetanus prophylaxis. The packed cell volume was 30%, the urea 16mg%, and the eletrolytes were normal. At 6.30p.m on 20th of May, 1999, i.e.approximately 24 hours after the incident and 20 hours after admission into the hospital service the scrotum was explored.

The delay preceding definite intervention was due to the malfunctioning of the theatre. At operation,the left testis was found to be in shreds and unsalvagable. A left orchidectomy was therefore performed. This was followed by extensive debridement of the scrotal skin and suture of lacerated right testis. The wound post-operatively was badly infected and required 40 days of hospitalization to achieve healing.

CASE 2 : Mr. A.S is a -35 year old policeman who reported to us one hour after he was shot by armed robbers. He was shot from behind from a distance of about 2 metres with a locally made shotgun and sustained injuries to his right forearm, genitalia and the right gluteal region.

There was no loss of consciousness but he was estimated to have lost about one pint of blood. He could not micturate but denied any history of bleeding per urethra. He was married and has two children. He neither smoked cigarettes nor drank alcohol.

He was found to be conscious and alert and had a pulse rate of 88/min. Examination of the genitalia revealed multiple pellet wounds on the dorsum of

the penis, and a distended urinary bladder. Both testis were tender.

The pellet exit wound over the right gluteal region was ragged and dirty. The right thigh had multiple puncture wounds and the right radius and ulna were fractured. The radial pulse was present. The immediate resuscitative measures included intravenous fluids,antibiotics, tetanus prophylaxis and analgesics. Laboratory investigation revealed a packed cell volume of 37%, blood urea of 19mg% and normal electrolytes. Definitive surgery was carried out at 11.00 p.m on 12th June, 1999 (44 hours after presentation).

The delay was owing to matters related to problems in the theatre. At exploration, the right testis had a 3cm laceration of the tunica albuginea and the epididymis was bruised. There was haematocoele on the left side. The multiple puncture wounds on the penis lodged 3 superficial pellets, and these were removed. The laceration in the tunica albuginea was sutured. He had extensive wound debridement and scrotal drainage. The forearm fractures were managed by a team of trauma surgeons.

Lagos University Teaching Hospital : 5 years Experience.

Patients and Methods

We retrieved the medical records of patients treated for genital injuries from January, 1994 to June, 1999. Data were obtained from these records on demography, presenting complaints, mechanism of injury, type of assault weapon used, time lag between trauma and presentation to hospital and injury to intervention, type of trauma injuries,duration of hospital stay and the complications. These data were analysed and the results are detailed as follows:

Results

Thirty four patients with genital injuries who had good records were evaluable. The age distribution as shown in Table 1 ranged from 2 weeks to 59 years. Eleven patients were below 9 years while 15 were between 20 and 49 years. There were only 2 female patients. Most of these patients were of the low socio-economic class, 3 were security officers (Table 2).

The main presenting symptoms and mechanism of injury are shown in tables 3 and 4. The chief complaints were painful penile/scrotal swellings and lacerations.

Table 1: Age Distribution

Age (Year)	No
0 - 9	11
10 - 19	4
20 - 29	9
30 - 49	6
50 - 59	4
60	-
Total	34

TABLE 2: Occupation

Occupation	No
Civil Servants	3
Trading	6
Artisan	6
Driving	2
Security Men	3
Students	4
Children	9
Gardener	1
	34

TABLE 3: Presenting Complaints

Gunshot Wound	7
Penile/Scrotal pain/Swelling	17
Penile/Scrotal Lacerations	27
Amputation of Penis	2
Fall	2
Burns	2
Haematuria	1
Leakage of urine from ventrum of penis	9

TABLE 4: Mechanism of Injury

Road Traffic Accident	7
Fall Astride	2
Gunshot	7
Fight	3
Circumcision	9
Paul's tube	2
Priapism	1
Burns	2
Tourniquet	1

Urethral fistulae followed circumcision in 9 children (Table 4). The ventrum of the glans penis was excised in 4 patients by midwives and the distal penile urethra was either excised or tied up in a ligature (which resulted in urethral fistula) by qualified but inexperienced doctors in the rest.

A penile Paul's tube device worn by 2 paraplegics traumatised and caused penile ulcers. A priapism patient in an attempt to induce detumescence forcibly bent his penis and subsequently fractured it. The fracture was preceded by a cracking sound. Seven patients sustained gunshot injuries, 4 of these were from home made shotgun, 2 from pistols and one from a police riffle. Four of the gunshots were close, within 4 metres range. Road traffic accident accounted for 7 of the cases and these were mainly related to motor cycles. Three of the cases resulted from fights. Only 2 of the patients presented to the hospital within the first hour of injury. About 40% of the rest were seen after 24 hours (Table 5). Definitive treatment within 12 hours of presentation at our hospital was possible in only 41% (Table 6).

TABLE 5:
Time Lag before presentation

Time (Hours)	No
within 1 hour	2
1 - 2 hours	6
3 - 4 hours	3
5 - 12 hours	3
13 - 24 hours	5
Over 24 hours	13
Not recorded	2

TABLE 6:
Intervention time (from presentation to definitive treatment)

Time (Hours)	No
within hour	2
5 - 12	9
13 - 24	10
Over 24 hours	12
Not recorded	1

1/5800a 9f9 - 19611

To improve erection, a 27 year old man tied a cotton thread around the proximal penis and forgot to undo it after coitus. The penis got swollen and buried the string. Urinary retention forced him to seek help. Under sedation, the string was cut with scissors and urine flow re-established.

The types of injury encountered are detailed in table7. The most common penile injury was laceration of the skin and gunshot was common offending agent. Two patients had their penises amputated following road traffic accidents.

A patient had electrical burns of over 70% including the whole of the external genitalia,while the testis was completely shattered in 2.Injury to the epididymis occured on 3 occasions. In one patient, the labia majora were lacerated and in yet another, post-burns healing resulted in the fusion of the labia with the concealment of the vaginal introitus and external urethral orifice (Fig 4A).There were 25 associated injuries, 15 of these were urethral, 4 thigh lacerations,4 pelvic fractures and one patient each had bladder contusion and fractures of forearm bones. Blood loss was neglible in about 86% and only the patient with fractured forearms bones required blood transfusion. Table 8 shows a summary of the operative procedures carried out on these patients. Nine patients had suprapubic cystostomy to divert urine, most of these patients had associated urethral ruptures. All the patients on admission had analgesics, antibiotics, tetanus prophylaxis, intravenous fluids and local wound dressing. When appropriate, this was followed by aggressive wound debridement, as well as saline and hydrogen peroxide irrigation.

TABLE 7: Type if injury

PENIS	
Fracture	1
Laceration of skin	9
Amputation	2
Haematoma	4
Ulceration	2
Burns	1
SCROTUM	
Haematoma	9
Laceration	7
Burns	2
TESTES	
Laceration of Tunica	
Albuginea	4
Haematocoele	2
Shattered	2
EPIDIDYMIS	
Laceration	3
LABIA	
Laceration	1
Burns Scar	1

TABLE 8: Treatment

Penis anastomosis	2
Wound debridement alon	6
Repair of Penile Fracture	1
Drainage of haematocoele	2
Repair of Tunica albuginea	3
Orchidectomy	3
Repair of labial laceration	1
Urethroplasty	11
Suprapubic Cystostomy	9
Reconstruction of labia	1

When primary debridement was discovered to be less thorough, re-operation and more drastic excision were carried out. Clean and uncontaminated wounds were closed primarily. The entry and exist wounds of gunshot injuries were excised and their connection tunnels were opened up (Fig.3B). Dirty wounds and most gunshot ones were left open to drained were later closed by delayed primary or secondary suturing.

Re-approximation of amputated penises failed. The method used in both cases was naked eye re-anastomosis of the septum, corpora and tunica albuginea over a urethral cathetar. Ischaemic time in both cases was over 18 hours and the distal penis was not stored at cold temperature pre-operatively. The proximal penile stumps were re-fashioned to yield functional but stunted penises.

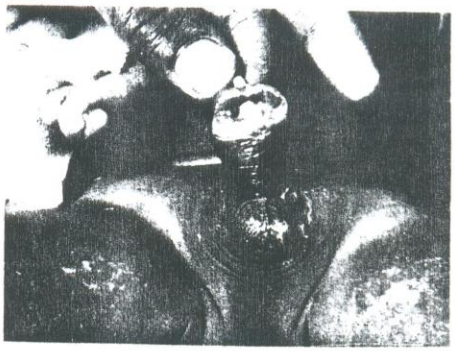

FIG 1: Post-circumcision distal urethral fistula. Patient was referred as missed hypospadias.

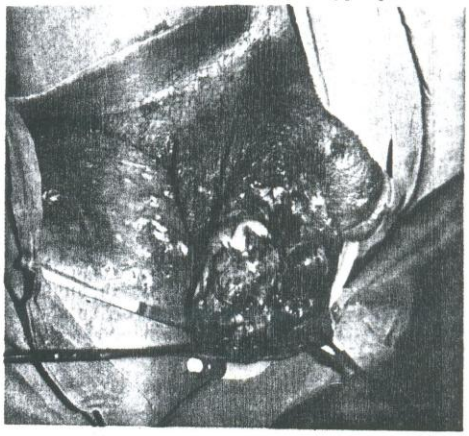

FIG 2a:Home-made shotgun injury. Note small multiple entry points, upper (R) thigh and shattered testis. Orchidectomy was performed.

The fractured penis was immediately degloved and the tear in the tunica albuginea debrided and closed with running dexon sutures. He regained erection after. The first of 2 shattered testis was initially managed by conservative suturing but it later become clear that the testis was dead. Orchidectomy was therefore performed. The second shattered testis was so badly damaged that primary orchidectomy was performed. The young girl with fused labia (Fig 4A) was managed with local skin flaps with excellent result (Fig 4B).

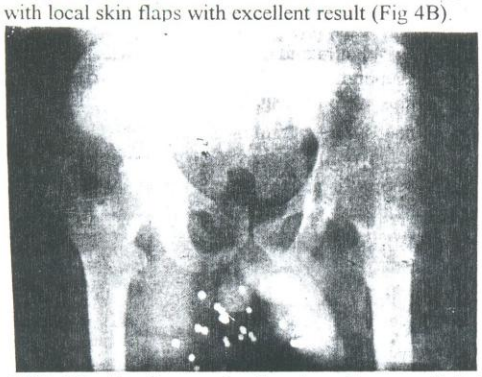

FIG 2B: Radiograph showing 5 superficial pellets in the penis. All were removed at Surgery.

FIG 3A : Bullet injury with entry through (L) groin and exit via (L) hemiscrotum and necrossed testis showing

Urethral strictures in 5 patients and urethrocutaneous fistulae in 6 children were treated by standard urethroplasty techniques with satisfactory outcome. Recorded complications are outlined in table 9. Wound infection was recorded in 63% of the patients and was a major cause of morbidity and prolonged hospital stay. One patient who lost the entire phallus to 70% electrical burns died, to account for a mortality rate of 3% in this report.

TABLE 9: Complications

Wound infection	18
Urethral stricture	5
Necrosis of anastomosed distal penile stump	2
Meatal stenosis	1
Dead	1
Erectile dysfunction	2

Discussion

Principles of Management

The general principles of wound management and a bit more are employed in genital injuries. First, genital injuries may be the result of or may trigger off emotional or psychological problems. A psychotic patient may amputate the penis to spite the spouse. On the other hand, genital trauma may trigger off latent erection dysfunction in some men. Furthermore, all types of genital trauma provoke in the patient the fear of loss of erection, fertility and cosmetic appeal of the genitalia, especially the penis. Most patients are quick to enquire about these very early. Reassurance is therefore an essential part of care, and is most effectively reinforced by prompt medical attention. Because an inevitable loss of genital function may be blamed on perceived delay in commencing treatment, tardiness should be avoided to prevent litigation.

Delays and Outcome: In this study unacceptable delays sometimes in excess of 24 hours caused by prolonged injury to arrival time to hospital and elongated injury to intervention time in hospital, were documented. The first was caused by the absence of quick evacuation service at the scene of road traffic accident or violence and the second by frequent mal-function of theatre facilities.

That time element impacts adversely on morbidity and mortality in all cases of trauma has been emphasised before by many authors and this was re-echoed in our study. To save both genitalia and life, injury to intervention time should be within minutes as obtain in the Western world.

Class of Injujry: The genitals may be injured by a penetrating force to wit: bullets, knives, arrows, machines, circumcision, zipper, or blunt ones, e.g. direct blows, violent kicks, sports and violent sex.

The former is associated with skin loss, laceration, avulsion, degloving and amputation, while the later is often accompanied by bruises, swelling and skin discoloration. Penetrating injuries cause external blood

1993 - 636-900857

loss while blunt ones seldomly do. In addition, the external genitalia may be injured by burns-thermal, electrical, chemical or irradiation. Trauma in 79% of our patients were caused by penetrating agents, gunshot and circumcision top the list (Table 4). Electrical burns took the rear of causes but its importance lies in its severity and it accounted for the only death in this report.

Infection Control: The clothing that provides cover and protection to the genitals may be its undoing in the event trauma. Agents causing penetrating injuries, like gunshot, explosives and arrows, often tear off and carry into their paths pieces of undergarments, which are harbingers of infection. It is therefore not surprising that infection rate was high in our patients (63%) like elsewhere. The kingpin of surgical management policy is therefore aimed at the prevention or reduction of infection.

Debridement: All penetrating injuries to the genitalia, however trivial, more so when caused by gunshot, must be explored and all dead and dying tissues excised until fresh bleeding tissues are reached. High velocity missiles by yawing, tumbling and cavitation formation cause unpredictable destruction and require special care. Wound irrigation with copious normal saline and hydrogen peroxides reduce bacterial load and enrich the local tissue oxygen necessary to discourage gram negative and gas forming organisms. There is nothing to gain by primary suture of wounds if such wounds are contaminated or infected. Wound dressing with Eurol followed by delayed suturing and reconstruction offer the best result in penetrating genital injuries. One badly shattered and potentially infected tests was initially managed conservatively in this series (Fig. 3A).

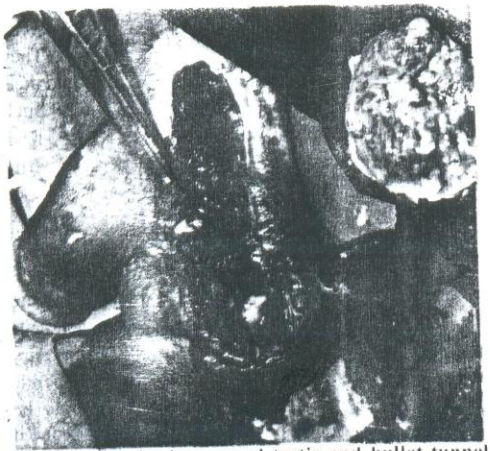

FIG 3B: Excised necrosed testis and bullet tunnel opened up for effective wound dressing until ready for secondary suturing.

The testis not only necrosed but provided a rich focus gram negative septicaemia until it was excised. Necrotic and devitatised tissues provide environ for colostral infection, particularly the ubiquitus clostridia tetani. Immunized patients should receive booster doses of tetanus toxoid and the non immunized in addition are protected with antitetanus serum. Broad spectrum antibiotics, especially those that are active against gram negative microbes are started immediately and continued until wound healing is achieved.

Penis: Clean penile skin laceration may be treated by primary suture with good result. When the penis is degloved and the injury to intervention time prolonged, the dead skin is excised and the denuded penis covered with split skin graft with satisfactory outcome.

Fracture of the Penis: The penis is fractured when a transverse tear occurs in the fibrous tunic, the tunica albuginea, which envelopes the penis and forms an enclosed compartment necessary to achieve erection. Like it happens in fractures of long bones, a cracking sound is heard by the patient.

To fracture the penis two conditions must be present. First the penis must be erect and secondly a bending force must be applied. In our solitary patent, erection had lasted for hours (priapism) from sickle cell anaemia and the patient had forcibly bent the penis, to achieve detumescence, but fractured it in the process. Erection ceased, but the penis got swollen and skin became dark. Violent sex, replacement of erect penis into a tight pant, sitting on an erect penis and aggressive penile manual manipulation during love play may achieve the same result[6-9].

We immediately degloved the penis in our patient and repaired the crack in the tunica albuginea with running sutures. Erection was regained after. Some authors advocate non-operative intervention of the fracture penis. Erection failure and penile deformity so often complicate this approach that few experts would recommend it.

Tourniquet Injury: If a band is applied accross the proximal penis, its venous drainage is impeded and erection is produced or enhanced. This principles is used to induce artificial erection necessary for adequate surgical correction of chordee. Patients resort to all forms of tourniquet devices: rings - metal or plastic, rubber bands, human hair (spouse's) or like our patient did cotton thread to achieve better erection. With erection, the penile girth distal to the constriction is increased and the ring may be entrapped. Consequent penile oedema may bury the ring and conceal it from

view, further compounding the difficulty of retrieval. This happened to our patient. Overtime, the blood supply to the distal penis is compromised and the penis is strangulated. In addition, the underlying urethra may necrose and abscess and fistula may supervene. Acute penile strangulation by non-metal is treated (as we did in our patient) by simply cutting the agent with scissors. When the ring is metallic, a surgical saw is used, accompanied by cold water irrigation, to prevent burns from the heat generated in the process. The ring may also be removed by decompressing the corpora cavernosa by the method described by Winter for the relieve of priapism. Here a stab wound is made into the cavernosa via the glans penis with a small blade and rotated through 360. Blood is emptied from the cavernous spaces by manual compression, and the circumference of the distal penis reduced,enabling removal of the ring.

Circumcision: Circumcision was a major cause of penile injury in this series accounting for 26.5% of the patients. This contrasts with 5.4% reported from a London hospital .

All patients were referred as missed hypospadias that were discovered after circumcision. None of them had any tell-tale features of hypospadias and without a doubt they were all traumatic urethral fistulae (Fig.1). Circumcision in the newborn is part of our culture and is performed routinely within the first week of life in most. This compares with the practice amongst the Jews and contracts with what obtains in Europe and North America, where circumcision is indicated by such complications as phimosis and paraphimosis . This ritual is thought to be responsible for the low penile cancer rate in Nigerians as in Jews. In our rural and semi-urban population, this surgical procedure is performed by traditional birth attendants under unsterile conditions usually with any sharp objects, e.g.broken bottles, razor blades, stones, knives,etc. Infection particularly of the clostridium tetanus is common and many a neonate die from overwhelming tetanus. In our urban setting, modern midwives perform most routine circumcision using razor blades sterilised with methylated spirit or with sterile surgical blades. Amongst this group of patients, infection is less frequent but penile injury is common.

Midwives accounted for 44% of penile injury arising from circumcision in this study. Surprisingly, none was caused by traditional birth attendants. Orthodox medical officers accounted in this study for a sizeable number (56%) of circumcision related penile trauma.

The common errors that lead to penile injury include (a) failure to tease-off the inner preputial layer from the glans, both surfaces are usually gummed together by smegma, (b) failure to isolate bleeding vessesls from the underlying urethra before ligation. This is very likely to occur on the ventral surface of the distal penis where the urethra is relatively superficial.

Surgical repair of post circumcision penile fistulae is a very challenging task and is attendant by high failure and re-operations rates.

Many ingenous surgical techniques have been described but the secret of successful repair is to ensure a tension-free closure either with local or axial cutaneous flaps. Urinary diversion by suprapubic cystostomy, for about a week and a urethral stent with an inert tube enhance satisfactory results. Repair is best performed when the primary wound has healed and surrounding local skin oedema, has regressed.

The following precautions during circumcision may prevent or reduce urethral fistulae: (a) the preputial orifice must be stretched with forceps enough to allow the glans penis to pop out or be retrieved with ease; (b) the inner layer of the preputial skin should be teased off the glans downwards with wet gauze until the coronal sulcus is exposed; (c) circumcision should be initiated by a dorsal preputial skin slit incision with scissors, thereafter the prepuce,under direct, is subsequently excised; (d) bleeding vessels on the ventrum of the penis should be neatly picked up with small artery forceps and ligated away from the urethra.

Amputation of the Penis: Bhanganada and his colleagues,[1] in reporting their experience in the management of 18 penile amputations in Siam, observed that penile amputation was epidemic in Thailand. They noted that in less than 10 years, 100 husbands had their penises chopped off by their jealous housewives. Such brutal acts were not recorded in our service. The 2 penile amputees in this series, followed road traffic accidents. Penile macro re-approximation yield poor result when ischaemic time is prolonged[13, 15].

Our experience attests to this. Literature survey reveals that good results are best achieved when resuturing is immediate,ie when the warm ischaemic time is very short (<3hours) and /or when the penile penile stump is stored in cold saline. When primary penile autoanastomosis is unsuccessful, and the penile remnant is very deficient, penile function may be augmented using staged plastic repair, e.g. tubed pedicled skin, gracilis muscle or cartilage incorporated grafts. Today however, microsurgical repair is the desired option[16]

1993 - 636 - 900857

Self emasculation or astration injuries occur in persons of unstable minds, e.g. transexuals, psychotic; they require psychiatric counselling in order to achieve any rewarding repairs[2, 3, 13].

Scrotum and Labia: Isolated trauma to the scrotum was uncommon in our study. In most, scrotal lacerations were associated with injury to the testis or urethra. Trauma was often caused by road traffic accident involving the motocyclist and the pedestrian. In industrialised nations, in contrast, scrotal injuries particularly of the avulsion type are caused by machines, e.g. vacuum suction, hoovers[5]. The zipper injury is familiar but is usually trivial and seldom warrant hospital attendances.

We treated clean scrotal lacerations by early debridement and primary suturing. Where the wound is badly contaminated as in gunshot insults, we employed delayed wound suturing (Fig.3B) with optimal results. Unlike reports from other lands, no patient required skin grafting. Where total scrotal skin is lost, the denuded testis may be conveniently housed in a subcutaneous pouch in the upper thigh[4].

Extensive perineal burns had involved the labia and the surrounding skin is a 10 year old girl and upon healing by scar formation, the labia had fused and completely concealed the introitus to the urethra and vagina (Fig. 4A). Reconstruction with local skin flaps (Fig 4B) established excellent vaginal and urethral openings and cured urinary retention.

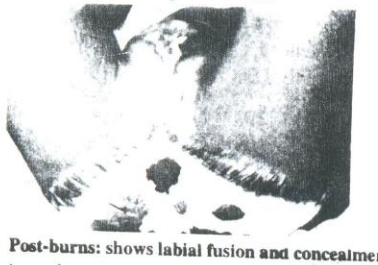

FIG 4A: Post-burns: shows labial fusion and concealment of introitus to vagina and external meatus.

FIG 4B: Labial fusion released and labia reconstructed with local skin flaps. Foley's Catheter indicates external meatus above and vaginal introitus below.

Testis Injury

The tunica albuginea covering the testis may be lacerated. This is often followed by eventration of the seminiferous tubules. In our practice, we excise the exuberant seminiferous tubules and close the rent in the tunica albuginea with 3/0 chromic sutures. Cass[18] had observed that early intervention reduces testicular dysfunction.

In two of our patients, the testis was completely shattered. As a rule we make serious attempts to salvage any damaged testis. Such efforts failed in 2 patients and the testes were excised.

In contrast to penetrating testicular trauma, blunt injury are uncommon. In blunt trauma, pain, haematoma and or haematocele may mask the injury to the testis, and may delay operative intervention with consequent higher morbidity and testicular loss[18]. The ultrasound study of all bluntly traumatised testes has therefore been advocated by many researchers[19] even though a false positive rate of 6% has been reported in such patients. Because in our centre scanning studies may further prolong intervention time, we explore as a matter of policy all bluntly traumatised testes as soon as the patients present. We are yet to record false negative exploration. Self-inflicted orchidectomy was not recorded in our centre in the study period, nor indeed at any time in our hospital. Such self mutilation occurs in societies where transexuality rate is high[2].

Associated Injury

Most injuries to the genitalia are diagnosed by diligent clinical examinations. The role of sophisticated and expensive investigations are limited except in blunt testicular injury where ultra-sound may unravel occult damage. However, injuries to the genitals are often associated with injuries to neighbouring or distant organs. These must be searched for and elucidated by special tests. In this study, genital injury was associated with urethral damage, bone fractures, bladder contusion, and erectile dysfunction and these necessitated appropriate ancillary tests for proper management. Literature reports suggest that associated urethral injury may be as high as 22% and indeed that routine urethrography should be mandatory in all patients with penetrating penile trauma to ascertain the health of the urethra.

Morbidity and Mortality

In this study, treatment outcome of genital injuries was adjudged excellent in 67% and satisfactory in another 12% of our patients. Two men who suffered amputation injury of the penis and who ended up with

stunted phallus were dissatisfied. In agreement with earlier reports, genital injuries by themselves rarely result in death. The only death in this study, was unrelated to the genital aspect of the trauma. Infection was a major threats to life and should be addressed early and aggressively.

Conclusion

Overall, our report supports observations from other lands that genital injury rate is low in peace time but we speculate that the incidence will rise with the increased domestic violence and armed robbery which we witness today in our urban cities.

References

1. Bhanganada, K. ChayavatanT.Pongnumkul, C,Tonmukayakul, A, et al
   Surgical management of an epidemic of penile amputation in Siam.
   Am. J. Surg. (1983); 146: 376-382.
2. Krieger, MJ, McAninch.J.W, Weimer, S.R.
   Self-performed bilateral orchietomy in transexuals.
   J.Clin Psychol.(1983) 43: 292-293.
3. Evins, S.C, Whittle, T., Rous,S.N
   Self Emasculation: Review of the Literative, Report of a case and outline of the objective of Management.
   J. Urol.(1977),
4. McAninch, J. W., Kahn, R. I., Brook Jeffrey, R, Lang, F. C., Krieger, M.J.
   Major traumatic and septic genital injuries.
   In: Whitehead. ED, ed. Current Operative Urology. Philadelphia:J.B.Lippincott co;(1992):132-137.
5. Grewal, S.S., Dalal, S.S., Singh, S., Singh, S.
   Traumatic degloving of penis.
   Br. J .Urol. (1982), 54: 296-297.
6. Lucey, D.T., Smith, M.J.V., Koontz, W.W.
   Modern trends in management of urologic trauma.
   J. Urol. (1982), 54:296-297.
7. Goh, H.S.,Trapnell, J.F.
   Fracture of the penis.
   Br. J. Surg. (1973), 67: 680-682.
8. Gross, M. Arnold, TL, Peters, P.
   Fracture of the penis with associated laceration of the urethra. J. Urol. (1977) 117: 725-726.
9. Wespes, E, Libert, M. Simon, J. Schulman C.C.
   Fracture of the penis: conservative versus surgical treatment.
   Eur.Urol (1987) 13:166-168
10. Winter C. C.
    Priapism treated by modification of the fistulae between glans penis and corpora cavernosa.
    J.Urol,(1978):(121):743-745.
11. Pryor, J.P., Hill, J.T., Packham,D.A., Yates-Bell, A.J.
    penile injuries with particular reference to injury to the erectile tissue.
    Br. J. Urol. (1981), 53: 42-46.
12. ONUIGBO, W.I.B
    Carcinoma of skin of penis.
    Br. J. Urol. (1985), 57: 465-466.
13. Engelmam, E..R., Polito, G. Perley, J. Bruffy, J. Martin, D.
    Travinatic amputation of the penis.
    J. Urol. (1974), 12: 77-778.
14. Bertini, J. E., Corriere, J. N.
    The etiology management of genital injuries.
    J. Trauma, (1988) 28: 1278 1281.
15. Jordan, G. H.
    Trauma of the male external genitalia.
    In Whitehead, ED, ed. Current Operative Urology Philadephia, J.B. Lippincott Co: (1992); 141-145.
16. Yamano, Y, Tanaka,
    Replantation of a completely amputated penis by micro surgical technique: A Case Report.
    Microsurgery (1984) 5: 40-43.
17. Culp, D.A.
    Genital injuries: etiology and initial management.
    Urol Clin. North Am. (1977), 4: 143-156.
18. Cass, AS
    Testicular trauma.
    J. Urol. (1983), 129: 299-300.
19. Albert, NE,
    Testicular ultrasound.
    J. Urol.(1980), 124: 558-559.

Request for reprints to:
D.N. Osegbe, Urology Unit,
Dept. of Surgery, College of Medicine,