

Injuries To Male External Genitalia Experience At Mayo Hospital Lahore

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Twenty consecutive male with injuries to external genitalia were included in the study. All belonged to lower income group. Mean age was 32.2 years. Injuries to external genitalia included, total penile avulsion (14/20) with or without degloving of the scrotal skin, mid penile amputation (1/20), amputated glans with degloving of the rest of the penile skin (1/20), subcoronal fistula (2/20), and penile fracture (2/20). Seventy five (75%) percent of injuries occurred due to entanglement of loose clothes in the wheel belt, leading to penile avulsion while rest of the injuries occurred due to animal strike, trauma, wearing of string around the glans criminal assault and electrocution. In 14 patients perineal urethrostomy was performed suitable to our voiding posture. In one patient penile reconstruction was done which was cosmetically and functionally acceptable while rest of injuries were dealt accordingly. Total penile avulsion and degloving injuries of penis and scrotum can be prevented by erecting iron bars around the revolving wheels and belt or advising the illiterate workers to wear tight dress like pant or short. We think it is responsibility of the government to safeguard its citizens and to make laws for their benefit.

Key Words: Penile avulsion, degloving injury, indispensable, replantation, microreplantation

External genitalia are indispensable for the propagation of human race. In the violent history of mankind amputation of the penises of the conquered race by the victorious army to degrade and to prevent propagation of the enemy's race was a common practice.¹

The reported injuries to external genitalia include partial amputation to complete avulsion of the penis, degloving of penile and scrotal skin, urethral fistula formation, penile rupture, testicular trauma, injuries to vas and epididymus.

The common mode of injuries to genitalia in developed countries is self emasculation in patient of psychiatric illness, from felonious assault, at the hands of jealous homosexual lover, people under the influence of drugs or alcohol at the time of action, by wearing constrictive penile bands called cockring to prolong erection, gunshot injuries, abnormal bending of penis during masturbation.^{2,3,4}

In children penile injuries has been reported from bicycle fall, sports injuries, straddle injuries, tourniquet injuries from metal, plastic or rubber bands or from human hair around the penis and from Zipper of pants.⁵

In our society injuries to external genitalia mostly occur in our rural population. The most common mode of injury is the wheel belt. The indigenous cheap machinery which incorporates belt and wheels for working serves many purposes for our rural population. It is used for reforming fodder, grinding wheat for human consumption, turning tube well shaft and many others. Farm machinery was also the most common cause of injury to external genitalia in developed countries but with improved safety measures this incidence has been greatly reduced.⁶

Other causes of injuries to external genitalia include constrictive penile band to prevent premature ejaculation or increase erection time, horse or donkey kick, strike with animal horn, it may be criminal act, iatrogenic.

gunshot injuries, maltreatment by sexual partner electrocution and condom injury.

The purpose of the study is to highlight predominance of injury and suggest safety measures for its prevention and discuss its present management strategies and future prospects.

Patients And Methods

The present study was conducted in the Department of Urology Mayo Hospital Lahore from August 1996 to August 1997.

Twenty consecutive males of any age with injuries to external genitalia were included in the study. The age, profession, home address, mode of injury, type of dress at the time of injury were noted. Thorough physical examination was performed to see the nature of the injury and other associated injuries. Negative pressure around the revolving wheel belt was determined by producing smoke or holding a piece of cloth strip close to the wheel belt. The smoke or piece of cloth strip was moving towards moving wheel belt within a distance of 5-10 cm depending upon the speed of wheel belt.

Results

There were 20 patients in our study. The patients ranged in age from 10-50 years with mean age 32.2 years. Peak age incidence (80%) was between 20-49 years. Among 20 sufferers, 8 were tube well operators, 6 were farmers, 2 students and 4 labourers. All belonged to lower income group. Their education status was under primary. Ninety five percent (19/20) belonged to rural areas. Six were unmarried. At the time of injury 14 patients were wearing "shalwar qameez" and 6 were wearing Dhoti and Qameez.

In twelve patients with total penile avulsion, the testes buried in the pouch created in the medial aspect of the thigh, were referred for urethrostomies. Two patients with

total penile avulsion and repaired partial loss of scrotal skin were also referred for urethrostomies. One patient presented with mid penile amputation and intact scrotum. One patient with degloving of penile skin with amputated glans and intact scrotum was referred for reconstruction of penis. Two patients presented with subcoronal fistula. Two cases with penile fracture were referred for repair.

Fifteen of the 20 injuries (75%) occurred due to entanglement of the penis in the wheel belt. One of the 20 injuries (5%) was due to buffalo horn which struck the patient early in the morning with erect penis causing penile fracture and disruption of corpus spongiosum and urethra. The other case of penile fracture occurred during intercourse. One case of subcoronal urethral fistula was created due to wearing of string around the corona to prevent premature ejaculation. In other case of subcoronal fistula, patient was hit by a swing on the penis. The mid penile amputation was done by the enemies of the patient to teach him a lesson.

In 14 patients with complete penile avulsion, perineal urethrostomies were performed, suitable to our voiding posture in the squatting position. In one patient with mid penile amputation, meatoplasty was performed. In single patient who presented with amputation of glans with loss of rest of the penile skin, penis was buried under the scrotal skin and he was advised to come after 3 months for reconstruction. Subcoronal fistulae were repaired.

In cases with penile fracture, repair of the tunica albuginea was performed. However in one case there was also disruption of corpus spongiosum and urethra. Exteriorization of the urethra was performed for 3 months and later on closure of iatrogenic fistula performed. In all these cases, no complication was noted except in 4 cases where perineal urethrostomies stenosed which were revised later on.

Discussion

In our study common injury of external genitalia was avulsion of the penis (70%) with or without degloving of the scrotal skin. The etiological mechanism was entanglement of clothes and then the genitalia in the moving wheel belt of the machinery of various kinds. Ninety five percent of our patients came from rural areas and their education status was below primary. The loose clothes like shalwar qameez or dhoti qameez is the common dress of our rural population. The strip of the shalwar or suspending lower end of qameez or dhoti of the worker standing close to the machine is trapped in the belt which is moving fast around the wheels. It also causes involvement of the male external genitalia hanging external to the body, leading to tragic incidents like penile avulsion, loss of penile or scrotal skin or amputation of the glans penis.

We observed by producing smoke or just holding a piece of cloth close to the revolving wheel belt that there is negative pressure upto a distance of 5-10 cm around the wheel belt depending upon the speed. Although it was a crude method to determine negative pressure which does

not measure it quantitatively but it gives us insight into the mechanism of the incident. We feel that when a person is within a distance of 5-10 cm, he is liable to be trapped leading to this awesome incident. Thus loose clothes, negligence, fastly moving wheel belt, negative pressure and very close distance tend to compound each other effect and paving the way for injuries to external genitalia.

These pathetic incidents can be prevented by just putting iron bars around the revolving wheel belt and wearing tight dress like pant or short. We visited various sites but we did not find iron bars erected around the revolving wheels belt and no worker was wearing tight dress like pant or short. When asked about, they were quite aware of the likely possibility of being trapped in the revolving wheel belt but they fixed the responsibility of erecting iron bars either on the government or private owners and further said they have to do the work to earn bread for their children.

The workers who were owners themselves agreed that erection of bars will bring safety but financially was not feasible. However they agreed to erect bars around the belt. Regarding wearing tight dress while at work the young labourers < 30 years agreed but > 30-40 years responded that they never wore that kind of dress in the past.

We think it is responsibility of the government to safeguard its citizens and to make laws for their benefit. We are living in third world country and most of our population is illiterate and poor and they are bound to work under unfavourable circumstances. They are ignorant and have accepted the prevailing environment as their fortune.

The government is consciously neglecting the problems of the masses. We ask the government to make laws of erecting iron bars or building a small wall around the revolving wheels and belt or to cover it completely. The machinery workers should also be bound to wear pants or shorts while at work to avoid such tragic incidents and its consequences.

Replantation or microreplantation of partially amputated penis is being carried out since 1929 and 1976, respectively with cosmetically and functionally good results provided the severed organ is available within 24 hours and preserved in ice slush. However the totally avulsed organ is rarely suitable for replantation or microreplantation because of the stretch before the snap phenomenon which widely damages the vessels.¹

In our series all cases were referred from different centers after 7-30 days of injury. Fourteen cases were of total penile avulsion one case was of partial amputation and one case with glans amputation. So replantation or microreplantation was not possible. However with better orientation and education of primary referral centers and the patients to preserve the organ, microreplantation may be attempted to minimize sufferings of the unfortunate patients in the future.

Three patients presented to us with variable degree of skin loss one patient with total loss of penile skin with amputation of glans due to avulsion injury, 2 patients with subcoronal urethral fistula. In the patient with total loss of penile skin, penis was placed under the scrotum for 3 months after debridement of necrotic and granulation tissue from the penis. It was planned that after 3 months when the penis will take up the scrotal skin, the later in excess will be excised in such a way to cover the penis circumferentially. We think scrotal skin is loose and simulate penile skin and works well during erection. The penis reconstructed in such a way was cosmetically and functionally acceptable and the patient was happy. However the penile skin was hairy. The scrotal skin was used to place the penis and glans left exposed in the patients where erection is not expected.⁶

McAninch 1989 described experience of 40 patients with penile skin loss. He favoured full thickness graft or thick split thickness graft (Full epidermis and various degree of dermis 0.018 inch) in potent patients where preservation of unrestricted erectile function is consideration. There is limited contracture formation in full thickness or thick split thickness grafts. Graft site described is anterolateral aspect of thigh. Its thickness texture and color simulate those of penile skin. Thin split thickness grafts (0.008 to 0.014 inch or 0.15) and meshed split thickness graft are associated with high rate of contracture and restrict erection and a source of discomfort to the patient.⁷ In the patients with urethral fistulae, there was no significant skin loss, fistulae were repaired in two layers.

Penile fracture means injury to the erect penis due to direct blunt trauma that bends the organ abnormally leading to tear in the tunic albuginea. It may or may not be associated with urethral injury. Sexual trauma, abnormal bending during masturbation, rolling over in bed, bumping into furniture in dark, a kick from horse, gunshot injury, are mechanisms of penile fracture.⁸

In our study diagnosis was based on typical history and physical examination and both the cases were associated

with urethral injury. However, use of cavernosography, ultrasound retrograde urethrogram and even MRI has been reported for diagnosis.⁹

We treated our patients surgically with good results. However conservative management consisting of penile splinting and pressure dressing especially if associated with minor or no urethral injury has been favoured.

Conservative management is associated with more complications. There is risk of penile angulation due to excessive fibrosis leading to pain, possibility of missed urethral injury, persistent hematoma leading to penile abscess and prolonged convalescence. However surgical management is associated with significantly lower penile angulation, a shorter hospital stay and more rapid functional recovery.⁹ We also favour surgical management because we can detect urethral and corporal injuries and repair them simultaneously.

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