



## Lower Genital Tract Trauma in A Tertiary Care Centre in Mid-Western Nepal

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### ABSTRACT

**Introduction:** The study of lower genital tract trauma has become important in gynaecological practice. There is paucity of reports on this clinical entity from our settings. The main aim of this study is to document injuries in female lower genital tract in Mid-Western Nepal.

**Methods:** Sixty female patients admitted to the hospital with genital tract injuries caused by coitus or accidents were included in the study. Details of the causes of trauma clinical presentations and management were recorded.

**Results:** These injuries were grouped according to etiological factors. This study included 33 (55%) coital injuries and 27 (45%) non-coital injuries. Out of coital injury, 12 cases were criminal assault (rape) in age group of 4 to 18 years. Four unmarried girls had consensual sex. Non-coital injuries were due to fall from height, cattle horn injuries, straddle type of trauma, vulvar haematoma and anorectal injuries.

**Conclusions:** Appropriate surgical intervention can avert morbidity and mortality.

**Keywords:** accident; lower genital tract; Nepal; trauma.

### INTRODUCTION

The study of trauma has become important in medical practice. This is because of modern life style. Available evidence suggests that lower genital tract injuries are primarily of coital origin and may result in death where prompt diagnosis and treatment is not obtained. Publication on this subject is scarce. However, reliable data on all body injuries are needed to make informed decisions on how to deal with injuries. Injuries of non obstetric origin of genital tract are not rare. The etiological factors associated with non obstetric genital injury are associated with age, marital status, residential location, occupation, socioeconomic status, leisure and sporting activities and sexual behaviour. Some of these injuries are unique and pose diagnostic and management

challenges to clinicians even in well equipped centers.<sup>1</sup>

The objective of this study was to document injuries in female lower genital tract in mid-western Nepal.

### METHODS

This is an observational study consisting of cases admitted in emergency with gynaecological trauma to Nepalgunj Medical College, Kohalpur, Banke, Nepal

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from January 2012 to January 2014. All patients who were admitted to the gynaecological ward were included. Ethical approval was taken. Following complete history, after obtaining informed consent from the women, or from the parents in case of a minor girl, the patient underwent thorough vaginal at the rate rectal examination to ascertain the nature and extent of injuries. Surgical management was done and ultrasound was done in selected cases. Blood transfusion was given if there was evidence of exsanguinations.

## RESULTS

During the study period there were 60 cases of vulvo-vaginal injuries (Figure 1). There were 2048 admissions to gynaecology ward during the study period. Non-obstetric genital tract injury constituted 2.92% of all emergency gynaecological admissions.

The age of women ranged from 5-40 years. Majority of women 48 (80%) belonged to low socioeconomic status and rural areas. According to the aetiology, the patients were divided into coital and non-coital cases. There were 33 (55%) coital cases and 27 (6.66%) non-coital cases. In non-coital cases, main causes of injury were fall from height, tree, diving and swimming in stream due to which there were 10 (16.66%), 6 (10%) astride injury 4 cases of fall from a bicycle and 2 (3.33%) cases of automobile accident 3 (5%) cases sustained cattle horn injuries and there was one case each for foreign body (1.7%) and leech bite (1.7%) (Table 1).

**Figure 1. Etiology of non-obstetric lower genital tract injuries (n = 60).**

<b>Table 1. Causes of Non-Coital Genital Tract Injury (n = 27).</b>	
Type	n (%)
Fall from height (tree, diving in water and boating)	10 (16.66)
Bicycle accidents	4 (6.66)
Automobile accidents	2 (3.33)
Cattle horn injuries	3 (5)
Astride injuries (edge of chair, stools, sharp objects, ladder)	6 (10)
Leech bite	1 (1.66)
Foreign bodies	1 (1.66)
Total	27 (100)

The sociodemographic profile and causes of injuries were diverse and were therefore grouped into coital (33 cases) and non-coital (27 cases) groups (Table 2).

**Table 2. Number and sites of injuries.**

Sites of injury	Coital (n = 33)	Non-coital (n = 27)
<b>Lower vagina</b>		
Fourchette and hymen	8 (13.33%)	-
Left wall	2 (3.33%)	1 (1.66%)
Right wall	1 (1.66%)	-
Posterior wall	6 (10%)	3 (5%)
Anterior vaginal wall	-	-
<b>Upper vagina</b>		
Left fornix	1 (1.66%)	-
Right fornix	1 (1.66%)	-
Posterior fornix	6 (10%)	3 (5%)
Vulval haematoma	1 (1.66%)	6 (10%)
Labial injury	-	2 (3.33%)
Perineal injury	3 (5%)	5 (8.33%)
Urethral tear	4 (6.66%)	5 (8.33%)
Anorectal injury	-	2 (3.33%)

Out of 60 cases, 25 (42.3%) women with coital injuries presented with vaginal bleeding. Most of the patients came to the hospital directly. Total 17 (28.8%) cases were nulliparous women who had sustained injuries during their first intercourse involving fourchette and hymen, left wall, right wall or posterior vaginal wall (lower vagina). There were 8 (13.33%) cases of multiple tears and deep lacerations and 4 cases of urethral tears sustained girls between ages 5 to 7 years as a result of criminal assault. Similarly, there were 3 cases of dehiscence (perineal injury) of episiotomy wound several days after delivery and 1 case of vulval haematoma in a married 28 year old (Table 2). All cases of accidental injuries were admitted to the hospital with chief complaints of bleeding and pain.

## DISCUSSION

There is no written or established guideline for the management of lower genital tract injuries and therefore, the surgeon's judgment plays a crucial role in treatment. Initial assessment and resuscitation was done when necessary. Examination under anaesthesia and primary repair was attempted in majority of patients. These injuries were grouped into coital and non-coital (accidental) injuries. Most of girls or women presented with vaginal bleeding. Coital injury to the lower genital tract has been widely reported. The findings in this series have shown that parous women of reproductive age are equally at risk. Sau AK et al. found 42% coital injuries from voluntary intercourse and 58% non-coital injuries.<sup>2</sup> In this series 56% were coital injuries and 44% were non-coital injuries (Table

1, 2). Tearing of the hymen is almost inevitable with defloration and is sometimes accompanied by tear in the fourchette. This generally causes slight bleeding which ceases spontaneously.<sup>3,4</sup> Ligation, suture or pack is often necessary. Vaginal lacerations during coitus can cause severe bleeding and endanger life. Suture is the best method of treatment.

Coital injuries in vagina occurred mostly of two types lower vagina and introitus and second type in vaginal vault. Initial coitus (first act of coitus) after marriage can cause lower vaginal injuries and introital injuries (Table 2).

Many postulates have been suggested to the etiological basis of vaginal injuries. Van de velde postulated that disproportion of male and female genitalia, roughness and violent thrust of penis were important factors in rupture of vagina.<sup>5</sup> Bowyer found maximum patients in their study had coital injury in labia majora (7/83) whereas we found maximum in fourchette and hymen (8/60).<sup>6</sup> Lateral vaginal wall tear caused more bleeding.<sup>2</sup> Crescentic tear in posterior fornix does not bleed as much as the lateral vaginal wall.<sup>1</sup> Slaughter evaluated 311 rape victims and contemporaneously on 75 women after consensual sexual intercourse. Hymenal tear either single at 6 o'clock position (70%) or multiple or vaginal laceration were noted in this series.<sup>7</sup> Cases of rape of 3 girls 5 to 7 years of age had injuries present at the introitus and lateral side of external urinary meatus due to spasm of levator ani which prevents penetration. Women between 17 to 22 years had consensual sex with vaginal tears and one in the posterior fornix.

Other predisposing factors which have been noted by various authors are postmenopausal atrophic vagina, post operative scarring of the vagina and puerperium, first act of coitus, dorsal decubitus with hyperflexion of thigh, sitting or standing position during coitus, drunkenness and brutality of male partner.<sup>2,8</sup> We had not come across such cases.

Vulval haematoma have been evacuated and concomitant injury of that area has been sutured.

This lessens pain and expedites recovery.<sup>2</sup> Two cases of coital injury were due to congenital anomaly (Longitudinal septum in vagina in one and shallow vagina in another women). Dehiscence of 3 cases of episiotomy wound had taken place days after delivery due to coitus. Vagina often appears atrophic during puerperium particularly if the women are breast feeding. Sill PR et al. after retrospective analysis has found laceration of posterior fornix of vagina in 13 cases out of 25 cases admitted.<sup>8</sup> They suggested all patients complaining of postpartum vaginal bleeding should undergo speculum examination.<sup>8</sup> Slaughter L et al. have reviewed colposcopic findings of 311 victims of sexual assault to describe type extent and distribution of injuries.<sup>7</sup> There may be ethnic and cultural differences in sexual practices. The ideal method to deal with injuries advocated here is examination under general anaesthesia and primarily repair of injuries. Blood transfusions were given when necessary. Intravenous fluids and sedative were administered freely. The issue with consensual sex is different establishing interrater reliability for examinations, addressing potential confounding variables such as prior sexual history, condom and lubrication usage, rough intercourse, and marital rape cases should be considered while evaluating.<sup>9</sup>

## CONCLUSIONS

In conclusion, lower genital tract injuries in mid-western Nepal is commonly due to fall from height, falling astride or falls from bicycle and coitus. Severe injuries of lower genital tract are potentially fatal. Poor transport system from remote hilly region and social stigma prevents a patient from availing urgent treatment. The vulnerable population should be counselled to increase awareness that appropriate surgical intervention can avert both mortality and morbidity.

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**Conflict of Interest: None.**

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