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# Genital tract Fistula and Perineal Injuries: A case series from a Tertiary center in South Africa

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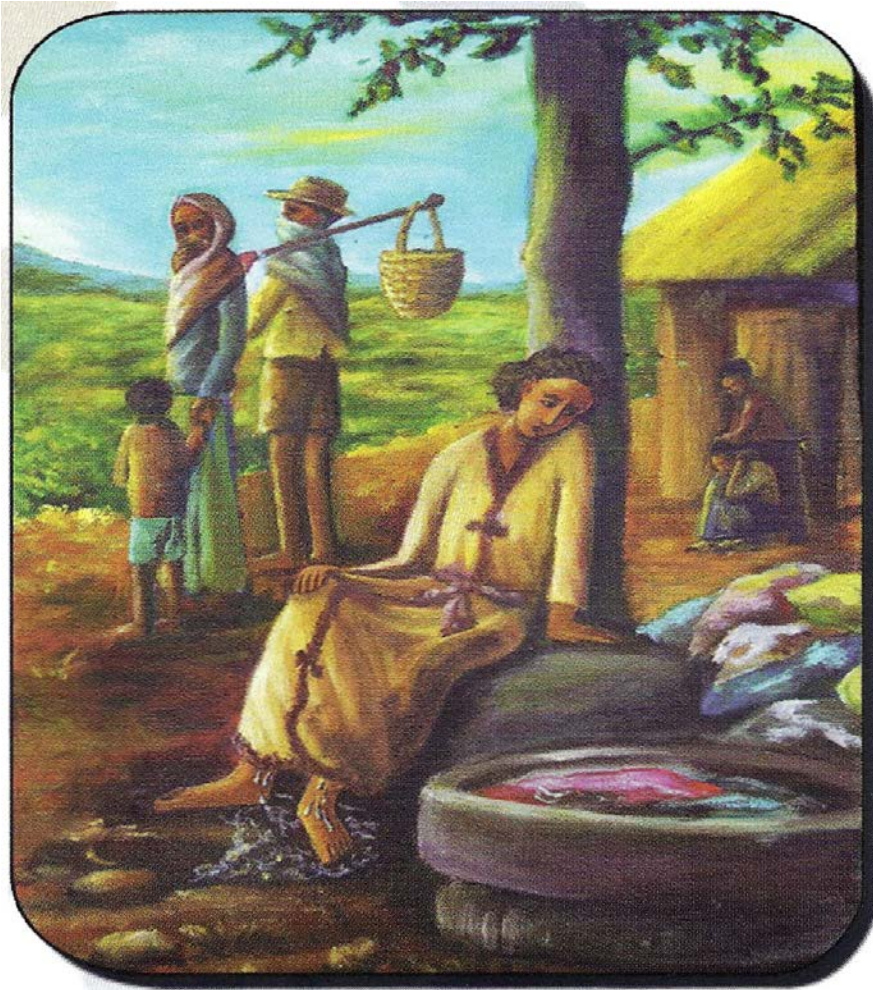


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# Declaration of interests

None

# Genital tract trauma



- Emotional, psychological and social problems
- Impacts negatively on the quality of life of affected individuals  
*Tebeu et al. 2012 , Muleta et al. 2010*
- Major health problem affecting women across all economic and social divides.
- Genital tract susceptible to trauma or injury during complicated childbirth and gynaecology surgery  
*Tebeu et al. 2012, Hilton 2011, Singh et al. 2010*
- This may result in fistula formation and perineal injuries with resultant urinary and anal incontinence.



- Resource constrained vs. well-resourced settings

Baghurst et al . 2012, Gupta et al. 2012, Hilton 2011, Singh et al. 2010, Ramphal et al .2008 ,Naru et al . 2004,Goh .1998

- South Africa is considered a middle income country with both first world and third world health care on offer.

- Few studies that have looked at genital tract trauma in South Africa

Naidoo et al .2015, Ramphal et al .2008



# Methods



## **Study Design, Setting and Population :**

- Retrospective chart audit of patients presenting to the Uro-gynaecology unit at Greys Hospital in Pietermaritzburg over an 8 year period
- Demographic, clinical, management and outcome data was collected
- Clinical Data -The aetiology of the injury, the timing of diagnosis , the centre and level of care where injury occurred, was a repair attempted prior to referral and how many times
- The characteristics of the injury, timing of referral, the technique of repair, number of attempts and surgical outcome were also noted.

## Data analysis:

- Analysed in SPSS version 23 (SPSS Inc., Chicago, Illinois, USA).
- Frequencies and means with standard deviations were presented for categorical and continuous data.
- Continuous dependent variables were categorized around the median for use in bivariate analyses.
- Bivariate statistics was done using Chi square ( $\alpha = 0.05$ ).
- All results were presented as frequencies, means and percentages



## **Regulatory approvals:**

- Institutional and hospital ethical approval were obtained from the relevant authorities
- Confidentiality was maintained at all times
- The principal investigator was responsible for capturing all data.



# Demographic profile of patients

N=102 (%)	
<b>Race</b>	
Black	69(67.6)
Indian	15(14.7)
White	13(12.7)
Coloured	5(4.9)
<b>Age</b>	
Minimum	15
Maximum	73
Mean	34.97 (SD: 13.2)
<b>Marital Status</b>	
Married	49(48.0)
Divorced	17(16.7)
In a relationship	13(12.7)
Single	23(22.5)
<b>Parity</b>	
0	1(1.0)
1	31(30.4)
2	31(30.4)
3	17(16.7)
4	17(16.70)
5	4(3.9)
8	1(1.0)
<b>Professional Status</b>	
Professional	9(8.8)
Skilled	23(22.5)
Unskilled	38(37.3)
Labourer	11(10.8)
Housewife	21(20.6)
<b>Education</b>	
Tertiary	8(7.8)
Secondary	63(61.8)
Primary	28(27.5)
Pre-primary	2(2.0)
None	1(1.0)

# Referral data

	N (%)
<b>Referral Site</b>	
Rural Clinic	9(8.8)
Urban clinic	2(2.0)
District hospital	40(39.2)
Regional hospital	32(31.4)
Tertiary hospital(in house)	2(2.0)
Private hospital	17(16.7)
<b>When injury detected</b>	
At the time of delivery/surgery	15(14.7)
Post-delivery/surgery (≤1 week)	31(30.4)
Delayed detection	27(26.5)
Missing	29(28.4)
<b>Time to presentation at Tertiary Centre</b>	
<1month	14(13.7)
1-3 months	29(28.4)
4-6 months	31(30.4)
7-12 months	8(7.8)
13mnths-2 yrs	4(3.9)
>2 yrs	16(15.7)
<b>Repaired previously</b>	
Yes	44(43.1)
No	58(56.9)
<b>If yes when?</b>	
At the time of injury	23(22.5)
Delayed	21(20.6)
<b>No. of repairs</b>	
1	28(27.5)
2	11(10.8)
3	5(4.9)

# Characteristics of Injury

N=102 (%)	
<b>Type of Injury</b>	
Vesicovaginal fistula (vvf)	40(39.2)
Ureterovaginal fistula(uvf)	6(5.9)
Urethrovaginal fistula	2(2.0)
Vesicouterine fistula	1(1.0)
vvf and uvf	1(1.0)
<b>Rectovaginal fistula (rvf)</b>	<b>36(35.3)</b>
Both rvf and vvf	1(1.0)
3 <sup>rd</sup> degree tear	5(4.9)
4 <sup>th</sup> degree tear	10(9.8)
<b>Grade of injury- size</b>	
<1cm	10(9.8)
1-3cm	40(39.2)
3-5cm	47(46.1)
>5cm	5(4.9)
<b>Grade of injury -scaring</b>	
none	7(6.9)
mild	30(29.4)
moderate	45(44.1)
severe	20(19.6)
<b>Grade of injury- number</b>	
single	92(90.2)
multiple	10(9.8)
<b>Cause of injury</b>	
Obstetric	74(72.5)
Non-obstetric	28(27.5)
<b>If Obstetric cause</b>	<b>74(72.5)</b>
Vaginal delivery	32(31.4)
Vaginal delivery +epis	1(1.0)
Instrumental Delivery	17(16.7)
Emergency c/s	19(18.6)
Elective c/s	5(4.9)
<b>If Non-obstetric cause</b>	
Gynae surgery	20(19.6)
Malignancy	2(2.0)
Radiotherapy	4(3.9)
Infection	1(1.0)
spontaneous	1(1.0)

# Characteristics of Antecedent Surgery

<b>Caesarean Delivery</b>		<b>N =24 (%)</b>
<b>Level of surgeon</b>		
Medical Officer		18(17.6)
Registrars		4(3.9)
Specialist		2(2.0)
<b>Type of anaesthetic</b>		
Regional		16(15.7)
General		8(7.8)
<b>Complications at Surgery</b>		
Bleeding		8(7.8)
Tear		2(2.0)
Impacted presentation		10(9.8)
Compound presentation		1(1.0)
Adherent placenta		2(2.0)
Extensive adhesions		1(1.0)
<b>Gynaecology Surgery</b>		<b>N=20 (%)</b>
<b>Nature of Surgery</b>		
Elective		13(12.7)
Emergency		6(5.9)
Oncology		1(1.0)
<b>Type of Surgery</b>		
Abdominal		9(8.8)
Vaginal		8(7.8)
Uro-gynae		3(2.9)
Emergency Hysterectomy		
Peri-partum		5(4.9)

# Surgical outcomes at Tertiary centre

N =102 (%)	
<b>Surgical Approach</b>	
Vaginal	70(68.6)
Abdominal	31(30.4)
Vaginal and abdominal	1(1.0)
<b>EUA*/cystoscopy</b>	
Yes	53(52.0)
No	49(48.0)
<b>Stenting of ureters</b>	
<b>Yes</b>	48(47.1)
<b>No</b>	54(52.9)
<b>Stents in for six weeks</b>	
Yes	30(29.4)
No	72(70.6)
<b>Ureteric re-implantation</b>	
Yes	8(7.8)
No	94(92.2)
<b>Fat pad/omental graft</b>	
Yes	20(19.6)
No	82(80.4)
<b>Diversion</b>	
Yes	8(7.8)
No	94(92.2)
<b>Type of diversion</b>	
Colostomy	7(6.9)
Urostomy	1(1.0)
<b>No. of repairs at centre</b>	
<b>1</b>	<b>89(87.3)</b>
2	11(10.8)
3 or more	2(2.0)
<b>Complications</b>	
Breakdown	10(9.8)
<b>Sepsis</b>	<b>12(11.8)</b>
None	78(76.5)
Breakdown and sepsis	1(1.0)
<b>Incontinence</b>	<b>13(12.7)</b>
Loss to follow up	1(1.0)

# HIV Status

Status	N (%)
Infected	21 (20.6)
Uninfected	81 (79.4)

On ARV's	
Yes	11 (10.8)
No	10 (9.8)

CD4 cell count at Presentation	
Mean	453.95 (SD: 236.1) cells/ $\mu$ L

CD4 cell count at Surgery	
Mean	468.48 (SD: 217.1) cells/ $\mu$ L

Postsurgical Sepsis in HIV infected patients *	
Yes	2 (10) **
No	18 (90)

\*1 HIV positive patient was lost to follow-up  
\*\* 15.4% of all septic patients were HIV positive





- Highlights the characteristics and management outcomes of patients with genital tract injuries seen at our unit.
- Women in this series were of an older age, married and well educated. Tebeu et al. 2012 , Muleta et al. 2010, Baghurst et al . 2012, Gupta et al. 2012, Goh .1998
- Majority of injuries followed childbirth, with gynaecology surgery accounting for many of the non-obstetric injuries.
- Findings in keeping with studies from well-resourced countries and specialized referral centers Hilton 2011,Singh et al. 2010,Naru et al . 2004
- May be more reflective of the patients referred to our unit i.e. from both public and private institutions

- In this series childbirth related injuries usually followed vaginal delivery, with C/D or assisted vaginal delivery accounting for the rest.
- The majority of childbirth related injuries were referred from district health facilities
- In keeping with studies from other specialized centers ,we found most injuries referred from regional centers followed gynaecology surgery

Hilton 2011, Singh et al. 2010,,Naru et al . 2004,

- Most injuries were detected at the time of the primary insult or within a week thereafter, with the remaining patients being diagnosed between a week to 2 years later

Hilton 2011, Singh et al. 2010, Ramphal et al. 2008

- In patients with extremely late or delayed development of fistulae, is this truly the case or is this more likely delayed presentation to the health facility

Muleta et al. 2010, Goh 1998

- Presentation to our unit varied from less than a month after diagnosis to over 2 years

- Practice regarding the surgical management of fistulae varies.
  - timing of the repair
  - approach and technique of repair
- practice generally accepted principles of fistula surgery
- Initially we used interpositional grafts, however this is no longer our practice.

Hilton 2011, Singh et al. 2010, Naru et al . 2004. Blaivas et al . 1995 Waaldijk 1994 , Blandy et al 1991,Cruikshank 1988 , Baghurst et al . 2012, Gupta et al. 2012. Ramphal et al .2008, Goh .1998

- address ureteric fistulae by means of an ureteroneocystostomy
- RVFs with multiple failed previous repairs we do a colostomy
- OASIS managed according to the principles recommended by the RCOG

Akiba et al .2016,Kniery et al. 2015, Valente et al . 2014

RCOG. Green-top Guideline No. 29. 2015

- high rate of successful repairs at the first attempt
  - Many of the primary failures at our centre were more likely to involve those patients with failed attempts prior to referral

Hilton 2011, Ramphal et al .2008, Naru et al . 2004

- The presence of urinary incontinence in our patients post repair highlights the fact that a successful closure does not necessarily equate to functional success

Frajzyngier et al. 2012, Hilton 2011, Muleta et al. 2010, Ramphal et al. 2008, Browning 2004, Goh 1998,

- We showed no significant association between HIV infection and post repair sepsis.
  - CD4 cell counts below 200 cells/ $\mu$ L are associated with post-surgical complications

Liu et al. 2014, Xia et al.2012

**SO WHAT DOES  
IT ALL MEAN**





- high rates of successful repairs despite varying aetiologies
- best chance of a successful surgical outcome is at the first attempt
- undertaken by someone with the necessary skill and expertise, highlighting the need for these patients to be managed in specialized centers.
- main cause of genital tract trauma remains obstetric, gynaecology surgery tended to be a major contributor at regional centers



- Retrospective record review of routinely collected data
- The data does not lend itself to any further analysis beyond that of a descriptive nature.
- No trend analysis was possible with respect to extent of improvement symptoms.



- Colleagues who have referred their patients to our unit for management
- The dedication of the nursing staff in the Urogynaecology clinic, Gynaecology ward and Operating Theatre of Grey's Hospital to the care of these patients
- The Consultants and the Medical Officers in the unit
- The courageousness and resilience of these patients under psychologically and socially debilitating conditions



Thank  
You

