



A Study on Newer Methods of Vesico vaginal fistula Repair with Special Reference to Laproscopic Surgery, Vesicoscopic and Vaginoscopic Surgery in Comparison to Conventional Vaginal and Abdominal Repair

Authors

Dr Mrityunjay Mundu¹, Dr Babu Mani Baski², Prof Dr Ranjan George Baxla³

¹Assistant Professor Surgery, RIMS Ranchi

²Senior Resident, Surgery

³Professor Surgery, RIMS Ranchi

Abstract

Vesico vaginal fistula repair is a challenging and demanding surgery. To do a self assessment in this area is important to continuously better the outcome. We present our experience.

Keywords- *vesicovaginal fistula, various techniques, success versus failure.*

INTRODUCTION

Vesico vaginal fistula repair which is not so uncommon in RIMS Ranchi. It is a demanding exercise both for the patient and the surgeon. The outcome of the surgery depends on various factors namely size, location, scarring, previous attempts, cause of vvf, the technique of repair etc.

The various approach employed are vaginal, abdominal or a combined vaginal and abdominal approach. With the advent of laparoscopy it is now possible to do the repair with minimal discomfort to the patient and better outcome. Similarly the vesicoscopic and vaginoscopic are also in the reported literature. The same principles of surgery with better finesse and control is the beauty of robotics surgery but for the cost and availability it is not for all. Laparoscopy and cystoscopy is available in our hospital and needs to be used for the betterment of the patient.

James Marion Sims published his famous discourse on the treatment of VVF in 1852.. In 1914, Latzko published his partial colpocleisis technique for repair of post hysterectomy VVF, in which he employed the resection of scarred vaginal mucosa and a layered horizontal closure.

In 1950, O'Connor and Stovsky popularized the transabdominal approach and also proposed the use of electrocoagulation as an initial treatment modality in women with VVFs of 3.5 mm or less, citing a 73% success rate.

On the basis of our and literature data, we believe that laparoscopic VVF repair is feasible, safe and effective and it is a viable alternative to the traditional open procedure. (Surg Laparosc Endosc Percutan Tech. 2009 Oct;19(5):410-4. doi: 10.1097/SLE.0b013e3181b7315c.

Laparoscopic vesico-vaginal fistula repair: our experience and review of the literature. Porpiglia

F¹, Fiori C, Morra I, Ragni F, Vaccino D, Scarpa RM.)

Transvesicoscopic repair of VVF is feasible, safe, and results in lower morbidity and quicker recovery time. (Transvesicoscopic Repair of Vesicovaginal Fistula Nerli, R. B.; Reddy, Mallikarju January 2010 Diagnostic & Therapeutic Endoscopy; 2010, p1)

Aims and Objectives

1. To know the morbidity and mortality in the different approach to the surgery
2. To know the financial feasibility for the different approaches
3. To know the best method of surgery in our institution

Material and Methods

1. The study will be conducted in the diagnosed cases of vvf posted for repair in our unit
2. 10 cases of vesicoscopic repair will be done and the outcome will be Compared with similar 10 cases each done by vaginal or abdominal and Vaginal abdominal combined approaches
3. The cases with small supratrigonal defects only will be taken up for the Study.
4. The parameters to be compared are outcome closure/failure, outcome Continence/ incontinence, dysparunia, vault, prolapsed, operating time, Blood loss/transfused, post operative catheterization period, post op Hospital stay, cost of surgery.
5. The follow up for a period of six months.

Exclusion Criteria

1. The cases where the fistula can be approached by vaginal route adequately without episiotomy or moderate to heavy traction.
2. The recurrent cases.
3. The cases with trigonal defects, urethral defects, defects >10 mm, and those

requiring ureteric reimplantation. Malignancy.

10TH CASE MILESTONE IN VESICOVAGINAL FISTULA REPAIR SURGERY: A CRITICAL REVIEW

Introduction

Vesicovaginal fistula is an abnormal communication of urinary bladder and vagina that allows the continuous involuntary discharge of urine into the vaginal vault, a type of urogenital fistula. Other common types being uretrovaginal and urethrovaginal. The etiology being obstructed labour, lower segment caesarian section, hysterectomy, malignancy, violent rape, cancer operations, radiation therapy and cone biopsy.

Obstetric VVF related to prolonged labor remains a major medical problem in many underdeveloped countries with a low standard of obstetric care.^[2]

However, abdominal hysterectomy remains the most common cause of VVF in developed countries occurring in 1/1800 hysterectomies.^[3]

Social Consequences of Vesico-Vaginal Fistula are grave (2*)

The remedy is only surgical. It can be traditionally done pervaginally, per abdomen, cystoscopic, laparoscopic, vesicoscopic or robotic. The ultimate aim of surgery is closure of the fistula. Various methods of fistula repair have been described, Latzko procedure, Raaj, open transabdominal (o'connor), transvaginal, laparoscopic, transurethral endoscopic and urinary diversion depending on the characteristics of the fistula.(1*)

The other aims of the surgery can be sexual, reproductive, psychological and social rehabilitation. There are many workers in the area but in the mid 19th century the works of Sims attracted towards the magnitude and the effort needed. The patients he worked upon were the slaves, there was no anesthesia, no proper lighting system, no antibiotic, no catheter and no modern sutures. Still the work was a milestone to inspire many workers and for the benefit of many more

patients. Sims was successful only in his 30th attempt, so after doing more than 10 cases with success and failure it is prudent to do a self evaluation to further the prospects of this not so common but none the less gratifying surgery. Which is also a cause for more anguish and concern for surgeon and patient both, we present our experience.

VVFs that result from operative injury can be repaired with a success rate of 75-97%.

Controversy still exists over the timing, ideal surgical approach and need for adjuvant measures. We always had the following questions in our mind

Aims

- To do or not to do this surgery?
- Which route vaginal or abdominal?
- To do Epsiotomy or not during vaginal approach?
- Ureteric reimplant or not?
- Other procedures like division of vesical pedical/boari flap/psoas hitch/urinary diversion?

Material and methods

A retrospective study of the cases of urinary leakages per vaginum operated in our unit in last three years was done the data was collected and analysed with especial focus in cause/ classification/route of surgery/type of surgery/ interposition flap used/useful cystoscopy/ ureteric stenting/suprapubic cystostomy/episiotomy/ comorbid condition/operating time/blood loss/ anesthesia/ outcome/post operative continence/ duration of hospital stay/cost of treatment.

All the cases of the said symptom of urinary leakage per vaginum were examined in the o.p.d. with per vaginal digital examination to asses the introitus, length of vagina vis a vis its relation to the fistula and external urinary meatus, scarring ,presence of cervix, fistula.

Per speculum examination was done next to reconfirm the finding.

Swab test was needed only in patient where no obvious urinary leak was seen in the p/v or per speculum examination.

Examination under asesthesia was done in the o.t. just before surgery with examine and proceed system.

Observation and results:

Table – 1 : Age

| Age group (years) | No. of patients | Percentage |
|-------------------|-----------------|------------|
| 25-35 | 5 | 50 |
| 36-45 | 3 | 30 |
| 46-55 | 1 | 10 |
| 56-65 | 1 | 10 |

Table – 2 : Cause

| Cause | No. of patients | Percentage |
|-------|-----------------|------------|
| TAH | 4 | 40 |
| LSCS | 3 | 30 |
| VH | 2 | 20 |
| AH | 1 | 10 |

Table – 3 : Route

| Route | No. of patients | Percentage |
|-----------|-----------------|------------|
| Vaginal | 5 | 50 |
| Abdominal | 5 | 50 |

Table – 4 : Type of Surgery

| Type of surgery | No. of patients | Percentage |
|--|-----------------|------------|
| Lazko | 4 | 40 |
| O'connor | 3 | 30 |
| left ureteric reimplantation, boari flap | 2 | 20 |
| distal urethroplasty | 1 | 10 |

Table – 5 : Interposition flap

| Interposition flap | No. of patients | Percentage |
|--------------------|-----------------|------------|
| Yes | 9 | 90 |
| No | 1 | 10 |

Table – 6 : Cystoscopy

| Cystoscopy | No. of patients | Percentage |
|------------|-----------------|------------|
| Yes | 8 | 80 |
| No | 2 | 20 |

Table – 7 : Stenting

| Stenting | No. of patients | Percentage |
|----------|-----------------|------------|
| Yes | 3 | 30 |
| No | 7 | 70 |

Table no.-8: suprapubic cystostomy

| Suprapubic cystostomy | No. of patients | Percentage |
|-----------------------|-----------------|------------|
| Yes | 5 | 50 |
| No | 5 | 50 |

Table – 9: Blood transfusion

| Blood transfusion | No. of patients | Percentage |
|-------------------|-----------------|------------|
| None | 4 | 40 |
| One unit | 6 | 60 |

Table – 10: Operating time

| Operating time (minutes) | No. of patients | Percentage |
|--------------------------|-----------------|------------|
| 60–100 | 1 | 10 |
| 101–140 | 7 | 70 |
| > 140 | 2 | 20 |

Table – 12: Co morbid condition

| Co morbid condition | No. of patients | Percentage |
|---------------------|-----------------|------------|
| Present | 1 | 10 |
| Absent | 9 | 90 |

Table – 13 : Result

| Result | No. of patients | Percentage |
|---------|-----------------|------------|
| Closure | 8 | 80 |
| Failure | 2 | 20 |

Discussion

These figures indicate the frequency and type of fistula that could be repaired by a competent general surgeon.

A. Causes –causes of fistula Causes of V.V.F in India 2007(UNFPA report)

Obstructed labour 66%

Gynecological surgical complications mainly posthystrectomy 22%

Other causes 12%

> Percentile chart of causes of V.V.F in Nigeria in 2006

Obstetric complications 83%

Surgical complications 4%

Female genitalia mutilation 13%

To start a case of vvf repair the method described in the blandy text book of surgery was followed. considering the number of cases reporting to the surgical pod and the referral from Gynea dept we find ourselves in an appropriate position to do the surgery.

Operating time ;as claimed by the surgeon can be accomplished in 30 minutes however in our series the time was long.

Route of surgery; in good number of cases the route of repair can be vaginal, in our experience only the fistula that can be brought to the perineum with mild traction or with uni/bilateral episiotomy should be done vaginally. The approach should be decided at the time of surgery after anesthesia. in cases of very narrow introitus and high lying fistula and juxtaureteric fistula abdominal or a combined approach is better. The role of examination under anesthesia cannot be ignored.

The description of fistula is important for the proper data analysis.

The role of cystoscopy in the evaluation of fistula is limited to the smaller fistula. As the bladder fails to distend making it difficult to properly visualize the fistula. However in the cases where it is possible to see the fistula and the ureteric opening, bilateral double j stenting is good option.

Blood is given where the initial hemoglobin level was 9 gram percent. As assessment of blood loss is not possible due to continuous mixing of blood and urine. Intraoperative fall in blood or tachycardia may call for the replacement of blood. Follow up of the patients was only possible till second month. As they never reported beyond that period, speculative causes are poverty, good result with social rehabilitation, failure with none reporting

The future may look promising with robotics (3*) but considering the facilities and the cost involved we have enough reasons to be content with the results.

Conclusion

As our results are comparable our first question seems to be answered. The route of access should be chosen for the best possible mobilization and repair. The role of episiotomy in properly assessing, accessing and repairing is important; however in case of failure patient is worse-off than before. Fistula very close to ureteric opening need ureteric reimplantation.

In wide defects and recurrent cases interposing live grafts is good option which definitely help in fistula closure but there role in continence and sexual function needs to be further evaluated.

Success rates

This prospective study was carried out to find out outcome of surgical procedure in urogenital tract fistula. In our study all the patients were operated by senior surgeon and our success rate was 93% which is comparable with other studies where urogenital fistula repair were supervised by Prof: or associate Prof: were success rate was 85%.

Key to successful vesico-vaginal fistula repair – An experience of urogenital fistula surgeries and outcome at gynecological surgical camp.

Three patients failed repair giving a success rate of 94.2%.

References

1. Rakesh Kapoor, Ansari MS, Pratipal Singh, Parag Gupta, Naval Khurana, Anil Mandhani, Deepak Dubey, Aneesh Srivastava, Anant Kumar. Management of vesicovaginal fistula: An experience of 52 cases with a rationalized algorithm for choosing the transvaginal or transabdominal approach. *Indian Journal of Urology*, 2007; 23(4): 372-376.
2. Margaret Murphy. Social consequences of Vesico-Vaginal Fistula in Northern Nigeria. *Journal of Biosocial Science* 1981;13(2):139-150.
3. Bala M. Sundaram, Guru Kalidasan, Ashok K. Hemal. Robotic repair of vesicovaginal fistula: Case series of five patients. DOI: <http://dx.doi.org/10.1016/j.urol.2005.11.014>
4. Transvesicoscopic Repair of Vesicovaginal Fistula (R. B. Nerli and Mallikarjun Reddy). Department of Urology, KLES Kidney Foundation, KLES Dr. Prabhakar Kore Hospital, Belgaum 590010, India
5. The mean operative time was 155 min (range 90 to 240 min), which is similar with the open surgical group (155 min:135 min). The mean blood loss ranged from 40-80 mL (mean loss 62 mL), which is less than the open surgical group (62 mL : 151 mL).PL 15.
6. Laparoscopic repair of vesicovaginal fistula (VVF) ,Dong Wen Wang. Department of Urology, First Hospital of Shanxi Medical University, Taiyuan 030001, Shanxi, China Vol 1, Supplement 1 (March 2012): *Translational Andrology and Urology*
7. The mean operative time was 117.5 min (range: 100 to 150 min).ROBOTIC REPAIR OF VESICOVAGINAL FISTULAE WITH THE TRANSPERITONEAL-TRANSVAGINAL APPROACH: ACASE SERIE 10.1590/S1677-5538.IBJU.2014.06.12 .LUCIANO A. NUNEZ BRAGAYRAC 1; RAED A. AZHAR 2; GOLENA FERNANDEZ 1; MARINO CABRERA 1; ERIC SAENZ 1; VICTOR MACHUCA 1; ROBERT DE ANDRADE 1; OSWALDO CARMONA 1; RENE SOTELO 1.
8. Robotic and Minimally Invasive Surgery Center, Instituto Médico La Floresta. Caracas - Venezuela; 2 University of Southern California Institute of Urology, Keck School of Medicine, University of Southern California, Los Angeles, California, USA Original Article ,Vol. 40 (6): 810-815, November - December, 2014
9. Vesico Vaginal Fistula in Uganda. Brian Hancock MD FRCS .Formerly Surgeon at Kamuli Mission Hospital 1968 –1970, Consultant Surgeon at University Hospital of South Manchester, UK 1975 –2000. Visiting Consultant to Addis Ababa Fistula Hospital, Ethiopia
10. Vesicovaginal fistula: An update Santosh Kumar, Nitin S Kekre, Ganesh Gopalakrishnan ,Department of Urology, Christian Medical College, Vellore - 632 004, India Correspondence Address: Ganesh Gopalakrishnan ,Prof. and Head.,Department of Urology, Christian Medical College, Vellore - 632 004, Tamilnadu ,India ,*Indian J Urol* 2007;23:187-91
11. Transvaginal repair of a vesico-vaginal fistula using a mobilised vaginal flap to form the bladder base: a case report ,J.B. Sharma, A. Seth, S. Mittal ,March 2006 ,Vaginal flap re-enforcement of vesico-vaginal fistula repair.Mohamed S. Shoukry, Mohamed E. Hassouna, Salah El-Salmy, Aly M. Abdel-Karim July 2010
12. Experience with the immediate treatment of iatrogenic bladder injuries and the repair of complex vesico-vaginal fistulae by the transvesical approachE. Z. Moriel,

- D. Meirow, M. Zilberman, A. Farkas
.September 1993
13. Vesico-vaginal fistula repair as a day case:
is it a worthy venture? O. A. Ojengbede, I.
O. Morhason-Bello ,October 2013
14. .Robotic Repair of Vesico-vaginal Fistula
,Pankaj Wadhwa, Ashok K. Hemal2011
15. International Urogynecology Journal
,1998, Volume 9, Issue 4, pp 236-248
16. J. Marion Sims ,Female Pelvic
Reconstructive Surgery ,2003, pp 273-283
Vesico-vaginal and Urethro-vaginal
Fistulae
17. Paul Hilton , Obstetric Fistula,1988, pp
145-228 ,Management of Urinary
Fistulae
18. Robert F. Zacharin M.G.O. (Melb.),
F.R.C.S. (Eng.), F.R.C.O.G., F.R.A.C.S.,
F.R.A.C.O.G. M.D. (Melb.)