Original Article

Vesicovaginal Fistula

Simultaneous Repair for Complicated/Complex Vesicovaginal Fistula

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ABSTRACT

Objective: To determines the outcomes of repair of complicated/complex vesicovaginal fistulae (VVF) by simultaneously abdominal and vaginal approach.

Study Design: Prospective descriptive study

Place and Duration of Study: This study was conducted at PUMHS, Nawabshah from Jan. 2008 to Dec. 2012.

Materials and Methods: After routine clinical examination and investigation, patients having complicated/complex vesicovaginal fistulae were selected for repair. The patients having associated with colonic involvement or with preexisting malignant pelvic pathology were excluded from the study. Follow up was carried out weekly basis for 03 to 06 months.

Results: Our study comprises of only 12 cases having complicated/complex VVF. The mean age was 35 SD±3.5 years. The mean size of fistula was 3.9 SD±1.2 cm. The ureter and urethra were adjunct with fistula in 03(25%) and 02(%) cases respectively. All cases were treated with aforementioned method and auto-cystoplasty was carried in 08 (66.5%) cases. The uni-lateral and bilateral ureteric re-implantation was attempted in o1 (8.5%) and o2 (16.5%) cases respectively and double J stent were kept in all these cases. The success was achieved in 09(75%) cases. The short and long term complications like frequency/dysuria/urgency of micturation, urinary stress incontinence and dyspareunia that had occurred in 04 (33.5%), 02 (16.5%) and 05(41.5%) cases respectively.

Conclusion: simultaneously abdominal and vaginal approach should be considered as complementary add-on to improve the access in difficult instances from 02 sides. It authorizes the surgeon to excise the fistulous tract judiciously, facilitates to develop better cleavage planes and execute a more satisfactory repair.

Key Words: Vesicovaginal Fistula, Surgical Approach, Repair.

INTRODUCTION

The complicated/complex vesico-vaginal fistulae (VVF) predictably defined that it is greater than 04 cm and involve the continence mechanism and are associated with moderately severe scarring of the trigone and urethrovesical junction; and/or have multiple openings[1]. At least 03 million women in poor countries presented with un-repaired vesicovaginal fistulae[2]. These patients may be at the bottom of the heap socially, sexually, economically, politically and medically and make such patients outcast from society[3]. Traditionally, various methods of treatment for VVF repair were described but none of them offer comprehensive approach to complicated/complex fistulas. Minimal invasive methods of repair may be accessible only for un-complicated fistulas[4]. Where as, all-inclusive modality existing is the conventional surgery. Customarily, there are 02 surgical approaches for VVF repair either abdominal or vaginal methods[5]. Even in modern surgical era, unfortunately, some repair remains technically challenge both for gynecologist and urologist in certain difficult instance. Consequently, a number of patients undergo repeated operations owing to its complexity. Therefore, we design combined abdmino-vaginal approach for dual exposure and generous dissection of lower genital tract. The aim of our study was to determine the outcomes of complicated/complex VVF repair via this abdomino-vaginal approach.

MATERIALS AND METHODS

This prospective descriptive study was conducted between Jan: 2008 to Dec: 2012 at P.U.M.H.S Nawabshah. The screening workup of the patients like complete history, clinical examination and investigation like complete blood count and biochemistry, ultrasound, examination under anesthesia (EUA) and cystoscopy was evaluated. The patients having complicated/complex fistulae were included into the study. Patients with small bladder capacity, associated with colonic involvement and with preexisting malignant pelvic pathology were excluded from the study. Postoperative follow up was carried out weekly and then fortnightly basis for 06-12 month.

Technique of Repair: All patients were kept under reasonable degrees of trendelenburg but in the semilithotomy position with well flexed thighs. Prior to start of repair, final cystoscopic examination for review of the fistulous tracts and insertion of ureteric catheters in some cases was carried out. These ureteric catheters were kept in-situ during the surgery so as to identify and avoid the unexpected injury of the ureters. Both labia majora were sutured with respective thigh and further, a weighted speculum or lateral retractors were also use as required. This was found to give quite

adequate vaginal exposure. The stenotic vagina was excise at 12 o'clock position and that lead the approached to fistula tract generously. Then, stay sutures were placed on either side of the fistulous tract as an aid to dissection. If possible, the fistula was circumcised widely and tried to separate from the bladder. The vaginal incision is left open for a while and bladder was approached via lower abdominal a midline incision without changing position. Then fistulous tract dissected in a direction transverse to the vaginal incision to avoid overlapping of suture lines during closure. The bladder is separated from the vagina widely till free mobilization of both structures was achieved. All scar tissue and epithelial lining of the vagina and fistulous tract along with adjacent poorly nourished tissue were excised from either feasible side till free mobilization of both structures has been achieved. Auto-cystoplasty, where ever required, was carried via pedicle flap achieved from antero-superior wall of urinary bladder to bridge the gap of large fistulae. Then, the vagina and urinary bladder were closed with vicryl No. 1 and 3/0 interrupted sutures respectively. The remaining superior and anterior part of urinary bladder was repaired either with vicryl No. 2/0 or 0, interrupted suture. The omentum was interposed between two suture lines in all cases.

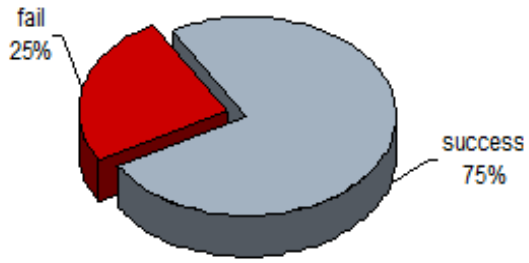
The neoureterocystotomy was made with vicryl No. 4/0 interrupted sutures, wherever ureter was involved in fistula tract and double J stent was inserted. Two drains extraperitoneally and intraperitoneally were left behind and the peritoneum and abdominal was closed in layers. The bladder was drain with 22F (03 ways) foleys catheter and at the end of procedure, 02 inch gauze, lubricated with antiseptic ointment was tightly packed into the vagina. The numerical data has analyzed, using a commercially available SPSS version 17.

RESULTS

Our study comprises of only 12 cases having complicated/complex VVF. The demographic profile of all patients is given in (Table 1). The foremost causes were obstetrical trauma and recurrent fistula that accounts for 07(58.5%) and 05(41.5%) cases respectively. The uni-lateral and bilateral ureteric re-implantation was made in o1 (8.5%) and o2 (16.5%) cases respectively and double J stent were kept in all these cases. Auto-cystoplasty was carried in 08 (66.5%) cases. The mean operative time was 145 SD ±23 minutes. Per-operative blood was transfused in all 100% cases. The over all success was achieved in 09 (75%) cases (Pie; 01). The success rate with or without auto-cystoplasty was achieved in 07/8 (87.5%) and 2/4 (50%) respectively. Statistically significant difference was found between these two groups (P< 0.05). Postoperative adverse sequences were infection (sepsis), self resolving persisting haematuria and wound dehiscence that had occurred in 01(8.5%), 04(33.5%), 01(8.5%) cases respectfully. The mean hospitalization stay was 8.5 SD ±2.5 days. Out of 03 (25%) failures of cases the mean recurrent size of fistula was 1.1 SD ±0.2 cm. Successful follow up was observed in all except 02 (17%) cases that bump into failure. Short term insignificance consequents like frequency/dysuria/ urgency of micturation had occurred in 04 (33.5%) cases. These were subsided with conservative treatment. The long term complications were urinary stress incontinence and dyspareunia that had occurred in 02 (16.5%) and 05(41.5%) cases respectively.

Table No.1: Patient Demographics

Patient Characteristics	Numbers of Patients
Mean age (in years)	31 ±3.5
Mean fistula size	3.9 ±1.2 cm
Mode of presentation via	
Referred	08 (66.5%)
Out- patient clinic	04 (33.5%)
Locations fistulas	
Trigonal and supra-trigonal	08 (66.5%)
Trigonal and ureters	02 (16.5%)
Trigonal and urethra	02 (16.5%)
Ureteric involvement	03 (25%)
Poor vaginal capacity/ fibrosis	05 (50%)
Cause of fistulae	
Obstet: Trauma	08 (66.5%)
Recurrent fistulae	04 (33.5%)



Pie 01: Success / Fail cases

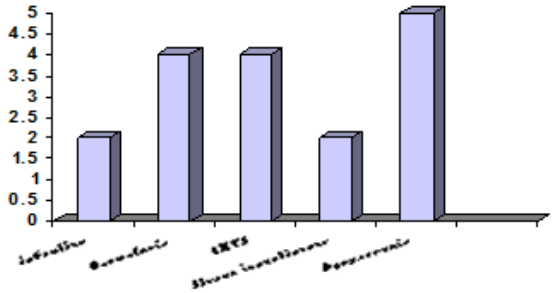


Chart 01: Complications

DISCUSSION

Last few decades witnessed that considerable progress has occurred in the outcome of simple VVF repair but yet it doesn't solved a practical confront for repair about complex one. The world literature[6] exposes that depending on the clinical perspective, surgeons should use the approach with which they feel most comfortable. Nevertheless, this matter-of-fact may not be anticipated when the complex fistula allied with compromised operative fields. In this context, Zhishun XU etal[7] and Lee RA et al[8] have recommended similar combined abdomino-perineal approach but these authors accomplished first vaginal repair in the lithotomy position and then changed it to the supine one and execute a trans-abdominal repair. Whereas, our integrated approach not only offers the dual route access without change of position but also permits coincident access to the urethra, vagina, urinary bladder and as well as to lower ureters. No difficulty was experienced during surgery; rather we had well followed all the aforementioned principles of repair relative easily[9]. We realized that this maneuver is rather convenient and put us forward to achieve better results.

In our study, although the obstetric trauma still is the main cause but recurrent fistulae also leads to second most source of complex fistulae (Tab. 01). The prevalent of former cases is similarly reported from India[10] and rather low to other published data from developing countries except northern Nigeria[11], where obstetric fistula reported very high and accounts for 84.1% to 100%. It may be justified on basis of that their studies are comprises with both simple and complicated cases. Interesting, another more recent series published by Tariq et al[12] who reported 84% post surgical cause of fistula in their cases. This statement from developing country is neither in accordance to present study nor matched with other globally available data[13]. We also could not found any good reason or justification from the study. Universal incidence of recurrent fistulae has reported only 10% cases[14] but it is quite more evident in our study (Tab. 01). This state of affairs may be explained on the basis that in our back wards area, fistula surgeons are working in un-appropriate equipped medical institute with lack of modern facility and with more so un-trained staff.

The success of VVF has been regarded as closure of fistulae and patients becomes continent. In this background, we already presented a study (Repair of vesico-vaginal fistulae. Abdominal versus vaginal route) Rasheed etal[15] in 2011, consisting with simple cases only. The selection criteria were design by our proposed simple algorithm, based on small size fistulae and more so not associate with connected pathology. And, we have been authenticated with remarkable achievement. This has given us courage to deal our difficult cases. Therefore, we designed another parallel component of study consisting with complicated/ complex fistula. Unfortunately, in present series, beside our all efforts and adopting mentioned rules[9], we were unable to get such triumph and attained success only in 75% cases (Pie. 01). Though, our results are not in accordance to some updated studies,[3,5.16-17] but is favorably comparable to Ockrim JL etal[18] in 2009 and Naru T etal[19] in 2004 who reported 75% and 79.5 to 83.8% success rate respectively. The former scholars also elaborated surgical factors relevant to success/ failure repair and concluded that complex VVF are challenging and a quarter of these required more than one attempt. While, likewise lower success rate of later study has been justified by relevant authors on their first attempt and it went up with their subsequent second attempt. Moreover that, our results are seems better when we compare with Husain A etal in 2005[20], who has reported only 63% and 61% success rate with primary and recurrent vesicovaginal fistulas repair respectively. Unfortunately, our study is also not similarly favorable with Zhishun XU etal[7] in 2005 and Sujata etal in 2008[21] who reported 100% success rate for their complicated cases of VVF. Although, these scholars also came up with same simultaneous abdmino-vaginal approaches for their complicated cases but former author[11] supported the distal vaginal defect with bulbocavernosus muscle flap from vaginal site. Whereas, the later authors not only presented a very small series comprised with 04 complicated cases only but also went through augmented cystoplasty and were using ileum. Instead, we patch up with auto-cystoplasty to those fistulae having large posterior gap. The pedicle flap was set from antero-superior wall of urinary bladder and then rotate posterior to bridge the gap. These cases had rather wide hole that otherwise was enables to co-opted. The rationale of failure in our series were that among them 01(8%) case developed infection and sepsis at repair site and in remaining 02(16%) cases distal vaginal defect was wide enough and vesicourethral angle was badly destroyed and repair was bit pacified.

In addition to the VVF repair, anti-refluxing neo-ureterocystostomy was made in those patients where ureter was also mixed up with situation (Tab: 1) and were saluted with JJ stenting. Nowadays, a new term ureterovesicovaginal fistula is being used internationally[22] and warranted for its mistaken.

Long term complications like urinary stress incontinence and dyspareunia occurred in those cases that had trigone/urethra involved or fibrotic vagina (Chart: 01). These are comparable with other studies[9,15-18]. The intensity of obstacle gradually reduced over 01 to 02 year with conservative management. Although, surgical techniques like pubovaginal sling[23] is recommended but we did not go through with this surgical technique.

In some difficult instances, many scholars, recommended urinary diversion[24] but our study has documented judicious approach concurrently throughout all stages of the operation. Furthermore, it authorizes the surgeon to execute a more satisfactory repair. We found key of success in large fistula is making a tension-free auto-cystoplasty.

CONCLUSION

We conclude that simultaneously abdominal and vaginal approach should not be viewed as a replacement technique but should rather be considered as complementary add-on to improve the access in difficult instances.

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