



## Outcome of vesicovaginal fistulae with emphasis on recurrent vesicovaginal fistulae - An institutional experience.

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### ABSTRACT

**AIMS & OBJECTIVES** To study the vesicovaginal fistulae in relation to etiology, size, location, various surgical modalities, outcomes and post op complications of VVF repair with emphasis on recurrence and its management.

**MATERIALS AND METHODS:** This is a retrospective study conducted at NIZAM'S institute of medical sciences in dept of urology from January 2013 to July 2016.. A total 52 vesico vaginal fistula cases were studied in detail as per proforma. All cases were subjected to clinical examination, ultrasonography, IVP, cystoscopy, vaginoscopy and CT cystogram for confirmation of diagnosis. All cases were managed surgically by different modalities and results were analysed. **CONCLUSION** Recurrent VVF is difficult to treat, but excellent results can still be achieved by strictly sticking to the principles of surgical repair of VVF with interpositional graft. Multiple fistulae, size and type of the fistula, and obstetrical etiology were the recurrence risk factors.

### KEYWORDS :

#### INTRODUCTION

Epidemiological studies on vesicovaginal fistula are few, are commonly institution based rather than community based, retrospective rather than prospective, mostly including hospitalized women and reporting personal experience of surgeons.<sup>1</sup>

Vesico vaginal fistulae (VVF) are the most common acquired fistula of the urinary tract and have been known since ancient times. VVF is a communication resulting from the breakdown in the tissue between the vaginal wall and the bladder. The consequence of such damage is urinary incontinence.<sup>2</sup> Urinary incontinence is associated with excoriation of perineal skin (ammoniacal dermatitis), infections, and stone formation in any available pocket either in vagina, bladder, urethra or ureter. In extreme cases the urethra, bladder and vaginal wall can be completely eroded.<sup>2</sup>

Recurrence of fistula is one of the very common complications of fistula repair. The disease has immense psychosomatic effect on the patients due to continuous leakage of urine. Recurrent VVF is quite distressing to both the patient and surgeon requiring careful evaluation of factors which may determine the outcome after surgical reconstruction of recurrent VVF.<sup>2,3</sup>

Management of recurrent vesico-vaginal fistula (VVF) repair poses a challenge to surgeons.

#### MATERIALS AND METHODS:

This is a retrospective study conducted at NIZAM'S institute of medical sciences in dept of urology from January 2013 to July 2016..

A total 52 vesico vaginal fistula cases were studied in detail as per proforma.

All cases were subjected to clinical examination, ultrasonography, IVP, cystoscopy, vaginoscopy and CT cystogram for confirmation of

diagnosis.

All cases were managed surgically by different modalities and results were analysed.

Bilateral splints (IFTs) were placed for all cases managed by abdominal approach.

Interposition of vascularised flap with omentum in O'Connor's approach and martius flap in vaginal approach was made mandatory in all cases.

All patients who were dealt by abdominal approach were allowed oral feeds after 24 hrs.

All surgically managed patients by open O'Connor's were kept on SPC malecot's catheter and perurethral Foley catheter drainage and laparoscopic, vaginal repair were kept on per urethral drainage for 3 wks.

After 3 weeks voiding trial was given after SPC clamping.

Recurrence of leak in post op period after Foley removal was considered as failure.

All cases were followed up for a period of 3 months post operatively.

#### results:

mean age of presentation is around 40.9 yrs, and the peak age of presentation is between 30-50 yrs with gynecological surgery constituting around 86.5% of cases (45 cases). 78.8% (41/52) of our patients presented with continuous leakage of urine with no normal voiding and only 11 patients (21.2%) had per vaginal leakage of urine with normal voiding pattern. 79% of our patients had fistula size ranging between 0.5-3 cm and the mean fistula size in our study is 2.3 cm. Success rate in our study with O'Connor approach was 95%, omental and peritoneal interpositional grafts were done in all

cases

## DISCUSSION

The mean age of presentation in earlier studies such as Kapoor et al,<sup>1</sup> Mallikarjun et al,<sup>2</sup> and Tariq et al<sup>3</sup> was 32 yrs and 35 yrs respectively and in our study mean age of presentation is around 40.9 yrs, and the peak age of presentation is between 30-50 yrs in our study constituting 69.2% of total patients. The peak incidence of VVF in this age group is explained by the increased no. of hysterectomies for benign diseases.

The most common cause of VVF in our study was gynecological surgery constituting around 86.5% of cases (45 cases) which correlates with the earlier studies as gynecological procedures being the most common cause as reported by Eilber et al<sup>4</sup>, Shah et al<sup>5</sup>, Tariq et al<sup>3</sup> of 91%, 64%, and 84% respectively and other reports of Lee<sup>6</sup> and colleagues and Goodwin et al<sup>7</sup> also shared similar experience.

While the other earlier studies such as Gupta et al<sup>8</sup>, Kapoor et al (2007)<sup>1</sup> contradict with our study with obstetrical procedures being most common cause of VVF with 70% and 59.6% respectively, this may be explained due to the increased availability of better obstetric care.

78.8% (41/52) of our patients presented with continuous leakage of urine with no normal voiding and only 11 patients (21.2%) had per vaginal leakage of urine with normal voiding pattern. The amount of leakage varies depending on the size and location of fistula, patients with small fistulae may void normal amounts of urine and notice only slight positional dependent drainage, patients with fistulae located high up in bladder may have leakage only at maximal bladder capacity, and patients with large fistula may have continuous leakage per vagina and may not void transurethrally. 78.8% of our patients had fistula size ranging between 0.5 -3 cm and the mean fistula size in our study is 2.3cm which is comparable with the reports of Razi et al<sup>9</sup> and Dalela et al<sup>10</sup> who reported the mean fistula size of around 2.9cm. This is explained by the occurrence of smaller fistulae following hysterectomy which constitute around 86.5% of cases in our study than with obstetric causes.

49 of our patients had fistula located in supratrigonal region constituting around 94.2% of total cases. These results were nearer with that of Rabbani et al<sup>11</sup> with 75% with respect to supra trigonal fistulae. Kapoor et al<sup>1</sup> reported 47% incidence of infratrigonal and trigonal fistulae whereas the present study has only 5.8% incidence, this may be explained by the more common incidence of supratrigonal fistula with hysterectomy and relatively more incidence of trigonal and infratrigonal fistula with obstetric procedure.

3 patients out of 49 constituting around 6.1% of cases managed by abdominal approach required ureteroneocystostomy as ancillary procedure, a similar requirement was noted in studies by Sotelo et al<sup>12</sup> where 1 out of 15 cases required ureteric reimplantation reporting around 6.6%. Two other studies by Agarwal et al<sup>13</sup> and Kristensen et al<sup>14</sup> reported a higher requirement of the procedure around 30%, this contradiction with our study may be explained by most of the larger fistulae nearer to ureteric orifice being treated by abdominal approach (O'Connor's) that might require reimplantation.

Success rate in our study with O'Connor approach was 95%, omental and peritoneal interpositional grafts were done in all cases, with nearer success rates were published by Blandy et al<sup>15</sup>, Lee et al<sup>6</sup>, Dalela et al<sup>10</sup> and Shelbai & Hashish et al.<sup>16</sup>

Only one case was managed with this approach with a success rate of 100% which correlates with Das Mahapatra et al,<sup>17</sup> and Naga raj et al<sup>18</sup> which is around 90-100%, which correlates with the present series. In one largest series by Shah et al<sup>3</sup> of 15 cases, a conversion rate of 30% was reported. A larger trial involving a larger cohort is

required for this approach to compare with other studies regarding the conversion rates. Other smaller series by Gozen et al<sup>19</sup> reported a success rate of 100% with 4 and 3 cases respectively.

Our overall success rate was around 96% in the present study which was comparable with Persky et al<sup>20</sup> and Tancer et al<sup>21</sup>, R.K. Mathur et al<sup>22</sup> who reported their success rate around 90%, this success rate is due to mandatory interposition of omental and peritoneal interpositional flap in O'Connor's approach and Martius flap in vaginal approach, and appropriate pre-operative evaluation and selecting an optimal approach.

Success rate in recurrent VVF cases is 77.8% in our study (7/9 cases). All the cases underwent O'Connor's abdominal approach with omentum as interpositional graft, as second repair. Reasons for failure in this study were early repair in obstetric fistula with large fistula (>4cm) and a case with multiple fistulae.

## CONCLUSION

Recurrent VVF is difficult to treat, but excellent results can still be achieved by strictly sticking to the principles of surgical repair of VVF with interpositional graft. Multiple fistulae, size and type of the fistula, and obstetrical etiology were the recurrence risk factors. The best chance of a successful repair is at the first attempt. In cases with multiple previous failed repairs, O'Connor's abdominal VVF repair with omental flap is a very effective salvage procedure.