Original Research Article

Trans-fistula anorectoplasty (TFARP) in the management of anorectal malformation (ARM) with recto vestibular fistula (RVF) in females. A retrospective study

Abstract

Aim: To determine the outcome of trans-fistula anorectoplasty (TFARP) in female children having anorectal malformation with recto-vestibular fistula.

Study design: A retrospective study

Place and Duration: Department of pediatric surgery during the period of February 2018 to February 2020.

Methodology: A total of 87 female children who have imperforate anus with recto-vestibular fistula from the age of 3 months to 6 years were included in this study. Initially, we have started this technique with the covering sigmoid colostomy, then TFARP after 12 weeks interval & once new anus healed and hegar dilatation achieved then sigmoid colostomy closed after 24 weeks of the first procedure. When we were experienced then we start TFARP as a single-stage procedure. Post-operative data regarding early complications of local wound infections, prolapse of the rectal mucosa, and late complications for anal stenosis, rectal prolapse, and scarring in the perineal body were collected up to 2-3 months respectively.

Results: A total of 87 patients were included in this study. The average operative time was 40 minutes. The total days of hospital stay were 3 to 5 days. Regarding early complications, skin excoriation was present in 21 (24%) followed by vaginal tear in 17 (19%) cases. Mucosal

prolapse was a late complication observed in 17 (20%) cases. Continence was good (Score 0) in 33 (38%) cases, while it was fair (score 1) in 36 (41%) cases.

Conclusion: Primary repair of recto-vestibular fistula by Trans-fistula anorectoplasty in children is a feasible procedure that has a good cosmetic appearance and anal continence. Single-stage reconstruction is possible in children with satisfactory results. It produces less morbidity and is a more efficient procedure.

Keywords: Trans-fistula anorectoplasty, anorectal malformation, recto vestibular fistula, children

Introduction:

The commonest anomaly in female children is anorectoplasty (ARM) with recto-vestibular fistula which is an intermediate variety [1]. Surgical correction is difficult due to the proximity of the vestibular opening with a vagina. Various surgical options are available to treat this condition. Anterior Sagittal Anorectoplasty (ASARP), Posterior Sagittal Anorectoplasty (PSARP), and trans-fistula anorectoplasty are the possible interventions [2]. Trans-fistula anorectoplasty is the new technique, which involves minimal disruption of pelvic muscles and less risk to damage pelvic nerves. The new anus was made within external anal sphincter margins once identified with a nerve stimulator. PSARP and ASARP involve the division of the perineal muscles of continence that is levator ani muscle and muscle complex perineal body [3]. In high-risk patients postoperative rates of complications are possible. The perineal complications include wound infection, anal stenosis, rectal mucosal, and rectal prolapse [4]. TRFARP is the new technique for the repair of the recto-vestibular fistula and is associated with a good prognosis and continence. The current study was planned to determine the outcome of trans-fistula

anorectoplasty (TFARP) in female children having anorectal malformation with recto-vestibular fistula.

Methodology:

This is a retrospective cross-sectional study that was done in the pediatric surgery department from February 2018 to February 2020. Permission was taken from the ethical review committee of the institute. All the females who have imperforate anus with recto-vestibular fistula from the age of 3 months to 6 years were included in this study. Initially, we have started this technique with the covering sigmoid colostomy, then TFARP after 12 weeks interval & once new anus healed and hegar dilatation achieved then sigmoid colostomy closed after 24 weeks of the first procedure. When we were experienced then we start TFARP as a single-stage procedure. A total of 87 children were included in this study.

Routine investigations were done and all patients also confirm or rule out for associated anomalies i-e VECTRAL association, preoperatively. Those who had primarily trans-fistula anorectoplasty were kept on the hegar dilatation program for 8 to 12 weeks. Preparation of colon done preoperatively with a colonic solution (Bisacodyl 2 tablets 2 days before the procedure) and we kept on a clear liquid diet two days before the definitive procedure. Post-operative data regarding early complications of local wound infections, prolapse of rectal mucosa and late complications for anal stenosis, rectal prolapse scarring in the perineal body were collected up to 2-3 months respectively.

Under general anesthesia with caudal block, Foleys catheter passed per urethra, and lithotomy position secured. The new anus site was marked with the help of a nerve stimulator. Circumferential incision made around the fistula. Traction sutures were placed around fistular

edges then gentle circumferential dissection started taking care of the vaginal wall anteriorly to prevent any damage. The fistular connection continues to the thick wall rectum after adequate mobilization of rectum achieved extended up to the cervix and posteriorly up to sacral promontory with help of nerve stimulator. The proposed annual site was determined and another vertical incision about 3 cm was made within the external anal sphincter limit. After making an opening rectum was pulled through the internal tunnel and fixed into a deep muscle complex with vicryl 4/0 about 12 to 16 stitches around the rectum and skin. Rest of wound & posterior wall of vagina repaired with vicryl 3/0 interrupted stitches. Patients were followed-up every 3 monthly for l year. According to Stamey's incontinence scoring system: Grade 0= No incontinence, Grade 1= Incontinence with coughing or straining, Grade 2= Incontinence with change in position or walking, and Grade 3= Total incontinence at all times. Data were recorded by using SPSS version 26.

Results

Table 1: Demographic characteristics of the study participants (n = 87)

Mean operation time	45 minutes
Mean hospital stay	7 days
Age distribution (Years)	
< I	31%
1-3	52%
>3	17%

Table 2: Complication of study participants

Early complications	**Number**	**Percentage**
Vaginal Tear	17	19
Wound infection	16	18
Wound dehiscence	Nil	Nil
Skin excoriation	21	24
Late Complications		
Mucosal Prolapse	17	20
Fistula formation	Nil	Nil
Anal stenosis	13	15

Table 3: Functional outcome of study participants

Continence	Number	Percentage
Good (Grade 0)	33	38
Fair (Grade 1)	36	41
Poor (Grade 2 and 3)	18	21

Discussion:

TFARP is a better surgical procedure regarding the outcome and cosmetic appearance of the perineum. There is no visible scar mark and perineal strength is better because of no involvement of the pelvic diaphragm. The current study was planned to determine the outcome of trans-fistula anorectoplasty (TFARP) in female children having anorectal malformation with recto-vestibular fistula. In our study, most of the female children were between the ages of 1-3 years. The most common early complication of the TFRAR procedure was skin excoriation, followed by vaginal tear and wound infection. The most common late complication was mucosal prolapse followed by anal stenosis. This procedure was not associated with wound dehiscence or fistula formation. There was a fair and good functional outcome in most girls, while the poor outcome was found in a few girls.

A study by Mitul AR et al revealed that mean operation time was 81 minutes while mean hospital stay was 8 days. A total of 2 patients developed anal stenosis. All children had excellent fecal continence. The more operation time in their study may be due to age factor, they had neonates in their study. They had fewer anal stenosis compared to us, again due to earlier

intervention in neonates [5]. Furthermore, a study by Khan JG concluded that only one patient developed partial wound dehiscence after TFARP. Contrary to that none of our patients developed wound dehiscence [6]. Similarly, Pratap A et al found TFARP a very safe and effective procedure. Moderate anal stenosis developed in only one patient that was treated with Hegar dilators. None of the patients developed rectal prolapse [7].

Anterior sagittal anorectoplasty [ASARP]) procedure for repair of Recto vestibular Fistula has more complications compared to TFARP. Khalifa M et al. used anterior sagittal anorectoplasty [ASARP]) procedure for repair of Recto vestibular Fistula. The mean age of the patients was 9.5 months. Anal stenosis was found in 10.9% of children while complications from colostomy were present in 19.5% of children [8].

In female children, one-stage sphincter-saving anorectoplasty is a better and safe procedure. Negm MA et al found that 7.89% of children developed wound dehiscence and 2.6% of children developed anal stenosis. All had good continence [9]. Moreover, Riaz M et al found that constipation was the most common complication after the Single-stage sphincter sparing scarless procedure for recto-vestibular fistula [10].

Conclusion: Primary repair of recto-vestibular fistula by Trans-fistula anorectoplasty in children is a better technique that has a good cosmetic appearance and anal continence. Single-stage reconstruction is possible in children with satisfactory results. It produces less morbidity and is the more efficient procedure

Permission:

It was taken from the ethical review committee of the institute

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