

PRIMARY PROCEDURE FOR RECTO-VESTIBULAR FISTULA IN FEMALE CHILDREN: AN EXPERIENCE AT KHYBER TEACHING HOSPITAL PESHAWAR

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ABSTRACT

Objective: The aim of this study was to evaluate the outcome of the alternative primary definitive surgical procedure without colostomy i.e. Posterior Sagittal anorectopexy (PSARP)/Anterior Sagittal anorectopexy (ASARP) in terms of cost effectiveness, mean hospital stay, complications, and short term functional outcome.

Material and method: This descriptive study was conducted in Khyber Teaching Hospital, Peshawar from June 2018 to May 2019. A total of 40 female children fulfilling inclusion criteria of the study were included. Exclusion criteria included patients with associated congenital anomalies. Cost of the surgical procedure was recorded in Pakistani Rupees from the receipts of surgical stuff needed; Operative time was measured in minutes and hospital stay in days. Parents' satisfaction was evaluated via Likert scale. Short term outcome was graded in terms of continence and incontinence by Kelley's criteria for fecal incontinence.

Results: These 40 patients fell in age range of 28 days to 8 months. No mortality noted during study period. Mean operative time was 50 ± 15 minutes. Mean Hospital stay was 6.65 days. Procedure related complications were recorded as wound infection 5(12.5%), wound dehiscence 1 (2.5%), posterior vaginal wall injury 5(12.5%). Eighty percent parents were very satisfied with the surgical outcome, 12.5 % were satisfied only and 7.5 % not satisfied. 25% patients exhibited good continence, 60% fair and 15 % fair only.

Conclusion: Primary single stage procedure either PSARP (Posterior sagittal anorectopexy) or ASARP (Anterior sagittal anorectopexy) for the correction of Rectovestibular fistula in female children of ARM (Anorectal malformation) is less traumatic, acceptable and affordable surgical option for poor parents with promising functional outcome.

Keywords: Anorectal Malformations, MRI, Posterior Sagittal Anorectoplasty

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INTRODUCTION

Anorectal malformations (ARMs) are birth imperfections in which the anus is absent or malformed. It affects both genders equally and its occurrence is 1 in 5000 births¹. ARM requires immediate operative correction to open a passage for feces, unless a fistula is present or until corrective surgery takes place². The most frequently encountered type of Anorectal Malformation in females is Recto-vestibular fistula (RVF)³. In these patients the opening of fistula lies in the vestibule between the hymen and the posterior fourchette⁴.

The most striking feature of this anomaly that should be kept in mind is the shared common wall of rec-

tum and vagina. The perineal sphincter muscle complex is adequately developed in these patients and they usually have normally developed sacrum and nerves. Proper management of this pathology results in a very good prognosis usually, in terms of bowel control⁵. Although the embryology of this anomaly along with the anatomy and physiology of fecal continence have been understood well, the occurrence of different pre-operative and post-operative complications have posed a challenge in the management of children born with RVF.⁴⁻⁶

There are numerous reasons for choosing one-stage repair of RVF, for example, decreased stress and insult for children as well as the parents, less psychological trauma for children, colostomy related complications can be avoided and decreasing risk of an adhesion obstruction in the future because of an abdominal opening, avoidance of multistage operations and decreasing time and costs. Pakistan is a developing country, having restricted medical resources, lack of trained pediatric surgeons, nursing and paramedical staff. Keeping in view poor socioeconomic status of the general public and fewer dedicated pediatric

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surgical tertiary care units with a heavy burden of elective and emergency cases, single stage surgical procedure for correction of recto-vestibular fistula in female children is an excellent option to address all these problems.

The purpose of conducting this research project was to determine the efficacy, safety and cost effectiveness of single surgical procedure for the correction of recto-vestibular fistula in female children with ARM.

MATERIAL AND MOTHDS

This case series was studied in the department of Pediatric Surgery, Khyber teaching hospital, Peshawar after formal approval from Institutional review and ethical board. Medical records of all the patients were recorded in a predesigned Performa. Study duration was one year commencing from the date of approval. All pediatric patients of female gender with ARM/RVF who presented to our department were included in the study. Those patients who were operated outside our unit, patients of common cloaca, those having major congenital heart disease, premature babies, patients having vertebral and spinal defects or other co-morbid conditions and patients who lost their follow-up visits were excluded from the study.

A total of 2892 admissions, ARM patients were 123 out of these patients 40 patients fulfill the study criteria. All these patients were admitted two days prior to surgical procedure. After informed written consent from parent/ care giver, baseline investigations were performed. Ultrasound abdomen to exclude other anomalies, spinal X-ray to evaluate sacral ratio and Echocardiography in selected cases was also done. Patients were given clear oral fluids until 4 to 6 hours prior to surgery. Bowel preparations were done by rectal irrigation 24 hours prior with normal saline @20ml/kg through feeding tube BD, before commencing surgery. I/v fluids and I/V metronidazole and I/V 3rd generation antibiotics were also administered before surgery. Under general Anesthesia patients were operated by either PSARP (posterior sagittal ano-rectoplasty) or ASARP (Anterior Sagittal Ano-rectoplasty) .Operative time and per op complications were recorded in the predesigned Performa.

Statistical analysis was done by SPSS version 20. Numerical data was calculated for age, hospital stay, and was calculated as percentages, mean and standard deviation while categorical data was calculated for cost effectiveness and bowel habits. Bowels habits were assessed by Kelly classification of incontinence, and parental satisfaction were assessed by Likertscale during the study period through a standardized questionnaire and was graded as very satisfied, satisfied and not satisfied. Frequencies and percentages were established.

RESULTS

Out of total 2892 admissions during this period,

ARM patients were 123. Out of these 123 ARM patients 43 patients fulfilled the study criteria. Three patients lost follow up so they were excluded from the study. Minimum age at the time of surgery was 28 days and maximum age was 8 months, mean age in days was 90 ± 10 days. Operative procedure time were noted to be minimum of 45 minutes while maximum time was 90 minutes, mean operative time was 50 ± 15 minutes. Hospital stay in days was in the range of 5 to 9 days and mean hospital stay was 6.65 days.

Per-operative complications were encountered and noted. Of these 5 patients (12.5%) had posterior vaginal wall injury inpatients whounderwent Posterior sagittal anorectoplasty, while no injury noted in patients who underwent Anterior sagittal anorectoplasty.

Total expenditure of the surgical procedure was minimum amount of 18,000PKR while maximum amount was 30,000PKR. This cost included the daily expenses of the care giver, surgical disposables, post-operative medicines and travelling costs of the patients and care giver to the hospital and back to their homes. This cost was mainly affected by the hospital stay duration and travelling distance.

No mortality noted during this study period. Follow up was done in OPD as well as through telephone. One patient underwent a redo surgery/anoplasty for severe anal stenosis which was not responding conservative management and had poor compliance to anal dilatation

Table 1: Comparison of complications rate with that reported in literature

Complications	Harjai MM et al	Naima Rasool et al	This study
1. Anal stenosis	3(11.11%)	2(5.5%)	1(2.5%)
2. Mucosal prolapse.	2(7.4%)	1(2.7%)	2(5%)
3. Anal retraction	Nil	Nil	Nil
4. Recurrent fistula.	Nil	Nil	Nil
5. Wound infection.	4(14.8%)	2(5.5%)	5(12.5%)
6. wound dehiscence.	2(7.4%)	2(5.5%)	1(2.5%)
7. Vaginal wall injury.	5(18.5%)	2(5.5%)	5(12.5%)

regimen.

DISCUSSION

In our study we analyzed 40 patients of anorectal malformation with recto-vestibular fistula in female children. These patients were in the age range of 28 days to 8 months, mean age is 90 ± 10 days. These results are similar to A.N. Gangopadhyayaa et al and HumamAlkhafaf and Naima Zameer et al which included 51 and 46 patients respectively.^{4,7} The operative procedure performed in this study are ASARP and PSARP without colostomy. In a total of 40 patients thirty patients have undergone PSARP while

in 10 patients ASARP has been performed. Mean operative time is 50 ± 15 minutes, similar results are reported by K Hasina et al where the mean documented operative time was 57 ± 13 minutes. Complications of the operative procedure are comparable to the results of Naima zamir et al, Hasina K et al^{4,8,9} (Table no 1). Mean hospital stay is 6.65 days maximum hospital stay is 9 days while minimum is 5 days in our series. Similar results were reported by Akshay et al and Pratap et al while. Humam S. Alkhaffaf study shows mean hospital stay of 3 days^{10,11}.

Keeping in view of the prevailing unstable economic condition of our country the single definitive primary procedure for the correction of ARM with RVF in female patient is a much attractive procedure to address these problems more rationally. Minimum amount of cost is 18000PKR, maximum cost of the procedure is 30000PKR. Cost includes admission charges, drugs, surgical disposables and daily expenses of the care giver alongwith travelling costs. Considering the cost of a conventional three procedures, primary single definitive procedure is a good alternative to conventional three stage procedures. Similar costs were documented by Hasina et al.

Kelly's criteria for fecal incontinence is the simplest of all scoring systems and is usable even in a 3-month infant. The results are interpreted on the basis of staining, accidental defecation and strength of sphincter squeeze on per-rectal examination for continence which has shown good results in 10(25%), fair in 24(60%) and poor in 6(15%). Our results can be compared to Kifayat khan good(30%), fair in (45%) and poor in (25%) and Mirshemirani et al (85%)^{11,12}.

In our study we have inquired about parental satisfaction regarding the primary definitive surgical procedure for the treatment of their children and have analyzed the results through Likert scale, 3(7.5%) parents were unsatisfied, while 17(42.5%) are satisfied and 20(50%) are highly satisfied with the surgical procedure. The results can be compared to D.A min off et al whose parental satisfaction were very satisfied 79% and 16% are unsatisfied^{13,14}. G Lauriti and colleagues also considered similar variables in their meta-analysis and endorsed the primary repair.¹⁵ The recent over the clip proctology system may have promising results in the years to come.¹⁶ Zamir N, and colleagues in their study found comparable results of ASARP.¹⁷ However, results of primary repair in era of laparoscopy via minimal invasive intervention is subject to comparative studies.^{18,19,20}

CONCLUSION

Primary single stage procedure without colostomy either by PSARP or ASARP for the definitive correction of recto-vestibular fistula in female children with Anorectal Malformation is a feasible procedure to address this anomaly. It has added benefits of modifying the traditional

three stage surgery of recto-vestibular fistula into a single definitive surgery. The cost is affordable to the parents, procedure is less traumatic to the patients and has good early functional outcome. However a randomized control trial with traditional procedure and the long term outcome evaluation is needed to thoroughly assess the relative benefits of the procedure.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

- Uzair M:** Concept and Design
- Ali S:** Acquisition and critical review
- Waheed T:** Analysis and interpretation of data
- Imran M:** Final approval
- Abdullah F:** Data collection
- Amin H:** Prof reading

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.