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One stage operation through modified posterior sagittal approach preserving the sphincter intact for anal agenesis with rectovestibular fistula

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ABSTRACT

Purpose: To describe the surgical technique and outcomes of an one stage operation through modified posterior sagittal approach (PSAP) preserving the sphincter intact for anal agenesia with rectovestibula fistula.
Patients and methods: 57 patients suffering from anal agenesis with rectovestibular fistula were operated by a one-stage operation through a modified PSAP preserving the external sphincter intact from 2002 to 2010.
The operation was performed in one-stage through a posterior sagittal approach with three modifications: The external sphincter complex was not opened on the posterior side, the dissection was carried out outside the rectal pouch, the rectal pouch was not tapered and was pulled through the center of the external sphincter identified by muscle stimulator.
Results: Patients age varied from 3 days to 30 days (mean: 21 ± 9 days). The mean operative time was 57 ± 8 min (range, 35–90 min). There were no intraoperative complications. There were no intraoperative or postoperative deaths. There were no early postoperative complications. Follow up from 40 months to 140 was obtained in 52 (91.2%) patients. Constipation has seen in 3 patient, 46 patients (88.5%) had 1–2 defecations per day, 2 patients (3.85%) had 3–4 defecations per day, 1 patients (1.9%) had more than 4 defecations, and 3 patients(5.8%) had one defecation every 2–3 days. Rectal mucosal prolapse occurred in 7 patients who required a second operation.
Conclusion: One stage operation through modified PSAP is feasible, is safe and provides good continence outcomes for anal agenesis with rectovestibular fistula.

During the last decade, multi-stage operations through PSAP have become the standard procedure for the correction of anorectal malformations [1–4]. However a single-stage operation has been used with good results [5–11]. Since 1984, a staged operation using a modified PSAP keeping the external sphincter intact has been used in our hospital to repair anorectal malformations providing good fecal continence [12,13]. In order to reduce the cost and time of treatment, since 2002, a single stage operation using a modified PSAP keeping the sphincter intact has been used for anal agenesis with rectovestibular fistula.

The aim of this report is to describe technical surgical details and to examine the feasibility, safety, and outcomes of the technique.

1. Patients and methods

57 patients were enrolled in this study from 2002 to 2010. Only female newborns suffering from anal agenesis with vestibular fistula were selected for this procedure.

Oral feeding was stopped right after confirming diagnosis. A catheter was inserted through the vestibular fistula. A colonic enema with normal saline was performed daily at least 3 days before operation. Third generation cephalosporin was given during anesthetic induction and continued for 5 days.

The patient was placed in a prone jackknife position. An inverted Y-shaped incision of the cutaneous and subcutaneous planes was made from the coccyx to the anal dimple. From the superior aspect, the incision was extended 2–3 cm higher than the level of the coccyx (Fig. 1). The coccyx was removed when the rectal pouch was dilated which causes difficulty in separating it from the vagina. The incision was continued until the external sphincter came into view. The midline dissection above the external sphincter was continued to the puborectalis. Once visualized, the puborectalis was retracted downward (Fig. 2). The fibrotic bands between the rectal pouch and the coccyx were divided. The rectal pouch was detached from its lateral sides and the anterior surface of the sacrum. Separation of the rectal pouch from the vagina was achieved by meticulous dissection. After the dissector was passed through the rectovaginal septum (Fig. 3), the rectal pouch was retracted posteriorly with a vessel loop. The dissection of the rectum from the vagina was continued distally to the fistula (Fig. 4). The fistula was divided leaving a short stump. This stump was inverted through the vestibular

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Fig. 1. Inverted Y shape skin incision.

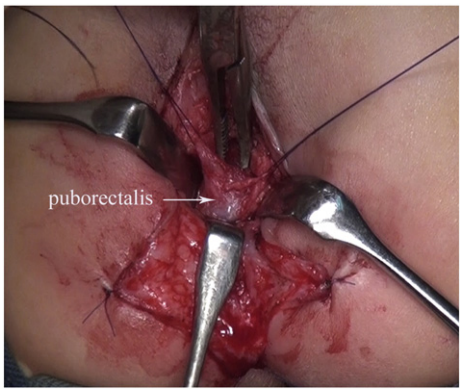

Fig. 2. Puborectalis was visualized.

orifice, and was completely excised to prevent ongoing mucus secretion. The orifice was closed.

A neuromuscular stimulator was used to identify the center of the external sphincter (Fig. 5), through which a tunnel was created (Fig. 6) and then dilated gradually using Hegar dilators (sizes 6–12) (Fig. 7). The rectal pouch was pulled through the tunnel, sutured to the external sphincter and then to the skin. The rectum was sutured to the upper border of the external sphincter complex by several sutures to prevent the rectal prolapse or retraction, then the incision was closed (Fig. 8).

A 24 F Foley catheter was inserted into the rectum. A colon wash out via this catheter was performed with normal saline until the liquid was clear. The catheter was kept in-situ for 3 days.

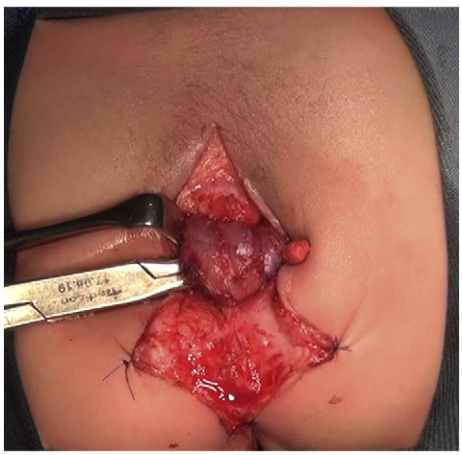

Fig. 3. A dissector was passed through the rectovaginal septum.

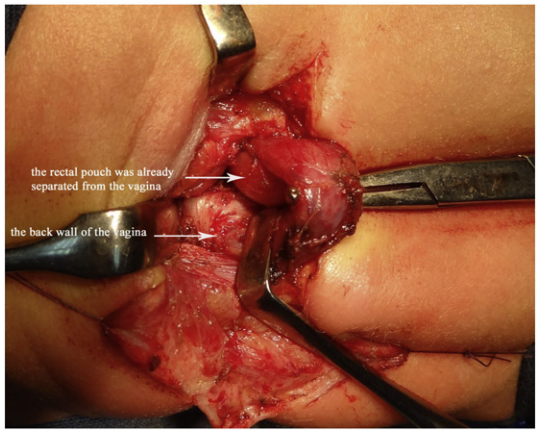

Fig. 4. The rectum was separated from the vagina.

Fig. 5. The external sphincter was stimulated with a neuromuscular stimulator to identify its center.

The new anus was gradually dilated from the 14th postoperative day for a period of one month.

2. Results

During the study period, 57 female newborns were operated on. The mean age was 21 ± 9 days (range, 3–30 days). Sacral anomaly was not seen in any patient.

Cardiac anomalies were associated in 6 patients including 2 patients with pattern ductus, 2 patients with ventricular septal defect, 1 with atrial septal defect, and 1 with Tetralogy of Fallot.

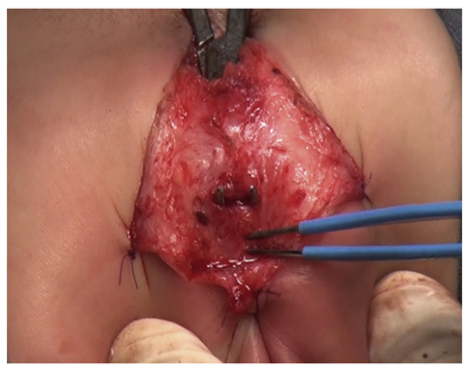

Fig. 6. A tunnel was created through the center of the external sphincter.