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Management of anorectal malformation without ligation of fistula: An approach preventing posterior urethral diverticula

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KEYWORDS

Anorectal malformation;
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Abstract *Objective:* The posterior urethral diverticulum is a common urologic complication requiring reoperations in anorectal malformation cases (ARM). We present a series of 24 cases of male ARM managed without ligation of fistula.

Material and methods: A prospective study was conducted between July 2010 and June 2012 including male neonates with ARM, where rectobladder neck and rectoprostatic fistula were approached by the abdominal route. The fistulous tract was dissected to the distal-most possible length and was excised flush with the urethra without its ligation. A per-urethral catheter was placed *in situ*. A record was made of any features of urinary leak and a micturating cystourethrogram was performed at the 1-year of follow-up.

Results: Twenty-four cases of ARM, 16 with rectobladder neck fistula and eight cases with rectoprostatic fistula were included. Of these, 12 had single-stage primary abdominoperineal pull-through and 10 were managed by primary posterior sagittal anorectoplasty. Two cases with colostomy during the neonatal period were managed by laparoscopic assisted anorectoplasty at 6 months. None of the cases had a urinary leak during the postoperative period. All had a normal micturating cystourethrogram at 1 year.

Conclusions: The approach of dividing fistula without ligation may prevent posterior urethral diverticula, but larger long-term follow-up studies are needed.

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Introduction

Single-stage repair for anorectal malformation (ARM) has shown results equivalent to staged procedures [1,2]. Various urologic complications have been reported following surgical management of ARM [2,3]. The posterior urethral diverticulum (PUD) is one urological complication that often requires reoperation in ARM cases when symptomatic [4]. PUD occurs because of incomplete dissection of the distal-most aspect of the rectum from the urethra and a diverticulum develops from a retained part of the rectourethral fistula which balloons out as more urine is sequestered in the pouch-like structure [5,13]. We present a series of 24 cases of male ARM managed without ligation of fistula, resulting in decreased incidence of PUD.

Material and methods

A prospective study was conducted in the department of Paediatric surgery S.S. hospital, B.H.U. Varanasi, between July 2010 and June 2012 after approval from the institutional ethics committee. A total of 108 male patients with ARM were admitted during the study period. All male neonates with ARM with rectobladder neck and rectoprostatic fistula approached through the abdominal route were included in the study. Neonates who were lost to follow-up or died during the postoperative period were excluded. Classification of cases was done on the basis of clinical examination and invertogram. An invertogram was obtained 24 h after birth in all the patients. A total of 24 cases were included in the study. Twenty-two patients underwent single-stage repair in the neonatal period. Two cases underwent laparoscopic assisted anorectoplasty (LAARP) following colostomy. The fistulous tract was dissected to the distal-most possible length and was excised flush with the urethra (Figs. 1 and 2). After this, the rectum was pulled through and the anoplasty was performed. A catheter was placed *in situ*. The catheter was removed on the 14th postoperative day. A record was made of postoperative recovery, including any features of urinary leak and other complications. Regular follow-up of all patients was done. Ultrasonography of the abdomen to evaluate the urinary tract was performed at 6 months. A micturating cystourethrogram was performed at 1 year after surgery for evidence of any urethral diverticula.

Results

Out of 108 cases of male ARM admitted to our unit during the study period, 24 cases were included in study. The mean age of presentation was 4.23 ± 1.24 days (range 2–6 days). Twenty-two patients underwent single-stage repair during the neonatal period. Two cases underwent laparoscopic assisted anorectoplasty (LAARP) following colostomy. In cases with a single-stage procedure, 12 had primary abdominoperineal pull through (APPT) and 10 were managed by abdomino-posterior sagittal anorectoplasty (PSARP). Two cases that underwent colostomy during the neonatal period were managed by LAARP at 6 months of age. In 16 cases there was a rectobladder neck fistula, and

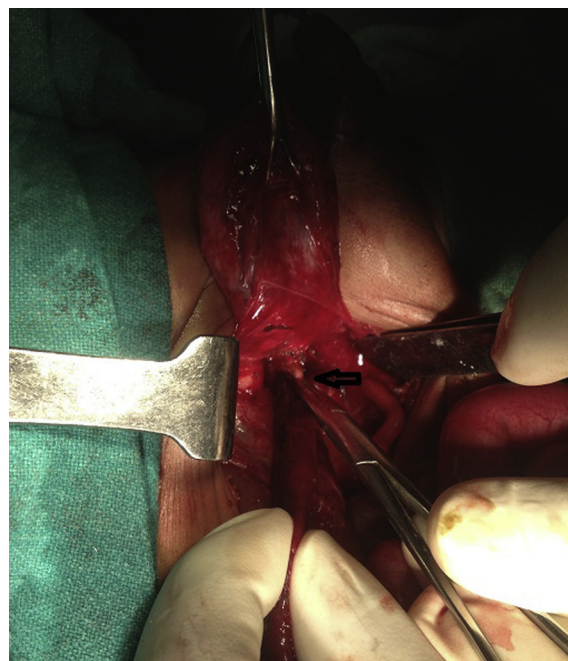


Figure 1 Rectoprostatic fistula dissected as far below as possible.

in eight cases there was a rectoprostatic fistula. The catheter was removed on the 14th postoperative day in 23 patients. None of these patients had urinary complaints or evidence of urinary leak during the postoperative period. One patient had accidental removal of the catheter on postoperative day 7; this patient also did not have any urinary complaints. No intraoperative and anaesthesia complications were recorded. Feeding was started on days 4–5. All neonates passed meconium an average of 48 h after surgery. All patients have regular 3-monthly follow-



Figure 2 Fistula divided without ligation.

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