Primary Repair of Extensive Rectal Injury during Urethroplasty in Children Without Bowel Preparation: Report of Two Cases

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Today, there are several methods to repair colon and rectal injury such as primary repair, stoma, resection with anastomosis and damage control only. To our best knowledge, there is no definite method published in literature about iatrogenic rectal injury during perineal urethroplasty in children. Here, we explain two 10 and -12year old boys with iatrogenic rectal injury during perineal urethroplasty who underwent primary repair. Based on our experience, primary repair of rectum in such condition is feasible, successful and can be a good choice to avoid placing colostomy and secondary repair.

Keywords: complication; rectal injury; perineal urethroplasty; primary repair

INTRODUCTION

Today, there are several methods to repair colon and rectal injury such as primary repair, stoma, resection with anastomosis and damage control only[(1)]. The method of choice to repair the injury is controversial, however, primary repair has been more preferred in recent years.[(2-4)] To our best knowledge, there is no standard method in the literature for repairing iatrogenic rectal injury during perineal urethroplasty in pediatrics. Here we explain two 10 and 12-year old cases with primary repair of iatrogenic rectal injury during perineal urethroplasty without any bowel preparation.

CASE REPORT

A 10-year-old boy was referred to our center with a totally blunt urethra and inability to void. He had undergone pelvic fixation, urethroplasty and repair of the bladder two years ago, after an extensive pelvic damage due to a car accident. He underwent internal urethrotomy three times during the past two years because of urethral stenosis recurrence (**Figure 1**).

After placing a cystostomy, he became a candidate to repeat urethroplasty (perineal end to end anastomotic urethroplasty). No bowel preparation and rectal washing was performed before the surgery. In lithotomy position, after perineal exploration, the urethra was found but because of adhesion and fibrosis band and difficult tissue dissection, the rectum was perforated about 5cm (**Figure 2**). After washing the field of surgery with adequate amount of normal saline and replacement of surgical draping and instruments, we repaired the rectum with vicryl and silk sutures in 2 layers. Then urethroplasty was performed using the standard method.[(5)]

Figure 1. Blunt urethra in urethrogram and evidence of previous surgery.

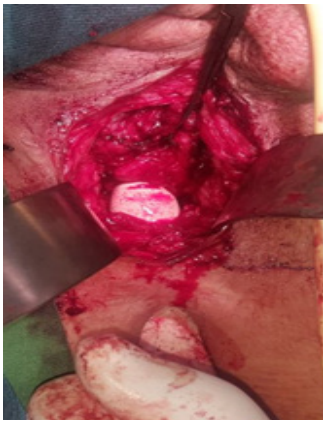

Figure 2. Digital rectal exam: tip of the finger that comes out of the rectal tear site shows the extent of injury.

Figure 2. Urethrogram after 6 months of surgery.

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This scenario was repeated for a 12-year old boy with a history of epispadias, bladder exstrophy, mega penis and perineal surgery for urethral stricture and fistula. His extended iatrogenic rectal injury during dissection was also repaired in 2 layers after cleaning the field of surgery.

The patients were allowed to start diet 6 hours after surgery. No evidence of rectal bleeding, ileus, abdominal pain and any related complications were observed. Foley catheter was removed after 10 days and voiding and defecation were uneventful afterward. Figure 3 shows the bladder and urethra after 6 months of surgery. There was no voiding problem at the patients' last follow up visits (6 months).

DISCUSSION

To the best of our knowledge, this is the first experience of primary repair of rectal injury during perineal urethroplasty in pediatrics. Gobbi et al. reported repairing congenital urethral strictures in seven infants[6]. Jianpo et al. reported a successful perineal urethroplasty in a nine-year old boy with long pelvic fracture and urethral distraction[7]. However, there was no experience of rectal injury during surgery in either papers.

Former experiences in adults have shown primary repair of rectum and placing colostomy as logical and available in patients with iatrogenic rectal injury. In agreement, Aragon et al. indicated primary repair as a safe procedure in the evaluation of 481 patients with abdominal trauma and colon injury[2], however Burak Veli et al. did not find any difference in outcomes after primary repair and colostomy placement[8]. In the evaluation of 10 patients, Papadopoulos et al. observed that colonic diversion should only be considered if the colon or rectal tissue were inappropriate due to severe ischemia or edema[9]. Surgery during 6 hours and in hemodynamically stable patients had a lower risk of complication. Past studies have shown that hypotension and unstable hemodynamics increase the incidence of collections and abscesses [10,11]. Many of these studies are conducted on patients with abdominal trauma and trans-peritoneal approach. Hosseini et al. evaluated erectile function in 65 adult patients with a history of perineal urethroplasty.[12] Qiang Fu et al. reported 28 out of 573 patients with rectal injury who underwent urethroplasty, all of which were primarily repaired, and a few of them underwent temporarily colostomy placement.[13]

Finally, it is worthy of note that we performed no bowel preparation and rectal washing was performed before surgery. The patients started diet 6 hours after the surgery without any problem. Although it is better to perform bowel preparation before these surgeries, we aimed to show the feasibility of primary repair without stoma in this situation.

CONCLUSIONS

Based on our experience, primary repair of rectal injury during perineal urethroplasty in children is feasible and can be a preferable alternative in order to avoid colostomy placement and secondary repair.

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