Minimally invasive management of congenital bladder diverticula: initial pediatric experience with laparoscopy

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Introduction

A urinary bladder diverticulum is an outpouching of the bladder mucosa through the detrusor muscle. Surgical management is indicated in symptomatic children with congenital bladder diverticula. While the traditional approach is open surgery, **laparoscopic diverticulectomy** has emerged as a minimally invasive alternative.

- We report our initial experience using the laparoscopic approach for vesical diverticulectomy in pediatric patients.

Methods

Between November 2012 and December 2020, three male patients aged 5 months, 5 years, and 7 years underwent laparoscopic diverticulectomy. Two cases involved a single left-sided diverticulum, and one had bilateral diverticula. A 5-mm umbilical trocar was inserted for open access, followed by intraperitoneal CO_2 insufflation (10 mm Hg). Two additional 3-mm trocars were placed in the right and left iliac regions. The bladder was insufflated via a transurethral catheter to better identify the diverticulum, and laparoscopic diverticulectomy was subsequently performed.

Results

- ✓ The mean operative time was 165 minutes (range: 150–180 min).
- ✓ Oral intake was resumed at a mean of 5.3 hours postoperatively (range: 4–6 h), following return of bowel function.
- ✓ Blood loss was minimal in all cases.
- ✓ Analgesia was limited to non-opioid medications during the first postoperative day, with no need for morphine.
- ✓ All patients were discharged on postoperative day five after urethral catheter removal.
- ✓ The mean follow-up period was 2.5 years (range: 8 months to 5 years).
- ✓ No postoperative urinary tract infections were reported.
- ✓ Follow-up ultrasounds showed a bladder with a thin, regular wall and no evidence of recurrence.

Conclusion

- ❖ Laparoscopic bladder diverticulectomy is a safe, technically feasible, and minimally invasive alternative to open surgery in children.
- ❖ Our preliminary experience suggests favorable outcomes with low morbidity and excellent postoperative recovery.