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HITCHING THE HUTCH DIVERTICULUM: RARE ENTITY MANAGED WITH MINIMAL INVASIVE SURGERY

Urology

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ABSTRACT

Background: Hutch Diverticulum is an uncommon congenital anomaly of the bladder, arising near the ureterovesical junction due to focal detrusor muscle weakness. It is often associated with vesicoureteral reflux (VUR), urinary tract infections (UTIs), and may present diagnostic and therapeutic challenges. The incidence of Primary Hutch Diverticulum is only around 1.7% with high preponderance in males. **Case Presentation:** Herein we, report a case of a 30-year-old male patient who was incidentally diagnosed to have a bladder diverticulum adjacent to the right ureteral orifices consistent with Hutch Diverticulum during evaluation for Acute Febrile Illness on CT scan. Therefore, the patient was then subjected to VCUG, and the diagnosis of Primary Hutch Diverticulum was established. Laparoscopic Diverticulectomy with Right Lich Gregoir ureteric reimplantation done over 6/26 DJ stent. The post-operative course was uneventful. The patient is doing well till date and follow up imaging was normal. **Conclusion:** Primary Hutch Diverticulum is a rare congenital anomaly. This case emphasizes the need for early diagnosis and appropriate surgical intervention. Laparoscopic techniques offer an effective minimally invasive approach for such complex urological reconstructions.

KEYWORDS

Hutch diverticulum, Urinary Bladder diverticulum, Vesicoureteral reflux, Minimal invasive surgery, Laparoscopic diverticulectomy, ureteric reimplantation.

INTRODUCTION

Hutch diverticulum is a congenital, Para ureteral bladder diverticulum occurring due to a localized detrusor muscle defect at the ureterovesical junction. It is most diagnosed in children, often in association with vesicoureteral reflux (VUR), but its occurrence in adults is rare and typically symptomatic [1,2]. Unlike acquired diverticula, Hutch diverticula lack a muscular layer, rendering them non-contractile and prone to urinary stasis and infection.

In adults, presenting features may include recurrent urinary tract infections (UTIs), haematuria, voiding dysfunction, or hydronephrosis. Imaging such as ultrasonography, voiding cystourethrogram (VCUG), and CT urography are crucial for diagnosis, while cystoscopy aids in direct visualization. Management is indicated for symptomatic or complicated cases, especially those involving VUR or obstructive uropathy [3].

Traditionally addressed via open surgery, minimally invasive approaches, particularly laparoscopic diverticulectomy with ureteric reimplantation, are gaining prominence due to reduced morbidity and faster recovery [4,5].

CASE CAPSULE: -

A 30-year-old man presented to our hospital for evaluation of fever, and his fever profile was within normal limits. Abdominal ultrasonography incidentally revealed a right para-ureteric diverticulum. He was referred to our urology team for further evaluation.

We obtained a VCUG and CT intravenous pyelogram (CT IVP), which confirmed the diagnosis of a primary Hutch diverticulum. The VCUG demonstrated a well-defined saccular outpouching at the right vesicoureteral junction, consistent with a Hutch diverticulum, along with grade 3 VUR (figure 1). CT IVP revealed a moderately sized (2.3×1.5×3.2cm) diverticulum arising from the posterior bladder wall near the right ureterovesical junction, without associated hydroureteronephrosis or calculi (figure 2).

After explaining the diagnosis and proposed intervention, we planned a laparoscopic diverticulectomy combined with a right-sided Lich-Gregoir extravesical ureteric reimplantation. Following anaesthesia clearance and preoperative work-up, we performed rigid cystoscopy, which identified an approximately 2 × 2.5 × 2 cm right para-vesicoureteric junction diverticulum (figure 3). We established a laparoscopic approach using a 10-mm infra-umbilical port and two 5-mm working ports in the right and left iliac fossae. We dissected the right ureter and diverticulum, excised the diverticulum, and closed its neck in a watertight fashion with 2-0 Vicryl. We confirmed closure integrity via a leak test. We then completed a Lich-Gregoir ureteric reimplantation over a 6Fr/26cm DJ stent using a 2–3cm submucosal tunnel. A 20Fr drain was placed, and port sites were closed.

Postoperative recovery was uneventful. The patient remained hemodynamically stable; we removed the abdominal drain on postoperative day 3, the Foley catheter on day 7, and sutures on day 10. Histopathological analysis confirmed transitional epithelium in the diverticulum wall, consistent with Hutch diverticulum (figure 4). The patient recovered well following discharge, with normal follow-up imaging. We removed the DJ stent 4 weeks after surgery.

DISCUSSION

Etiology And Pathophysiology

Hutch diverticulum represents a true congenital diverticulum composed solely of mucosa and submucosa, without a muscular coat. It results from a developmental weakness in the bladder wall near the ureteric hiatus. These diverticula are often located near or incorporate the ureteral orifice, which can result in: VUR, Recurrent UTI, Hydronephrosis and Upper tract deterioration [1,2].

Clinical Presentation And Diagnosis [3,6]

Adult presentation is uncommon and usually symptomatic. Diagnostic tools include:

- **Ultrasonography**: Initial assessment of hydronephrosis or post-void residual.
- **VCUG**: Essential for detecting VUR and diverticulum anatomy.
- **CT Urography**: High-resolution imaging for surgical planning.
- **Renal Scintigraphy (DTPA/MAG3)**: To assess differential renal function.
- **Cystoscopy**: For direct visualization and evaluation of diverticular neck and ureteric involvement

Surgical Management

Surgical intervention is recommended in symptomatic cases or when complications such as infection, obstruction, or reflux are present. The

primary objectives are to: Excise the diverticulum, address any VUR and Preserve renal function

When the ureter inserts into or near the diverticulum, ureteric reimplantation becomes necessary. The **Lich-Gregoir extravesical technique** is widely favoured due to its efficacy and simplicity, offering a low risk of ureteric stricture and reflux [4].

Laparoscopic Technique

Laparoscopic diverticulectomy provides the benefits of:

- Superior visualization
- Less postoperative pain
- Reduced hospital stays
- Enhanced cosmetic results

Key steps include:

1. Port placement and mobilization of the bladder
2. Identification and dissection of the diverticulum
3. Ureteric dissection and preservation
4. Diverticulectomy with bladder wall reconstruction
5. Ureteric reimplantation using extravesical anti-reflux technique
6. Bladder leak test and drain placement

Careful intraoperative identification of the ureter is crucial to avoid injury. The use of preoperative ureteric catheterization can aid in intraoperative ureteral localization [4,5,7].

Outcomes

Numerous case reports and small series have demonstrated excellent outcomes with laparoscopic diverticulectomy and ureteric reimplantation in both paediatric and adult patients [5,7]. Postoperative VCUG or renal imaging confirms resolution of VUR and improved drainage. Complication rates are low, and most patients experience symptom resolution and renal preservation.

CONCLUSION

Hutch diverticulum, though rare in adults, should be considered in patients presenting with recurrent UTIs, haematuria, or upper tract obstruction. Laparoscopic diverticulectomy with ureteric reimplantation offers a safe, minimally invasive, and effective treatment option. Early recognition and timely surgical intervention prevent complications such as renal deterioration and significantly improve patient outcomes.

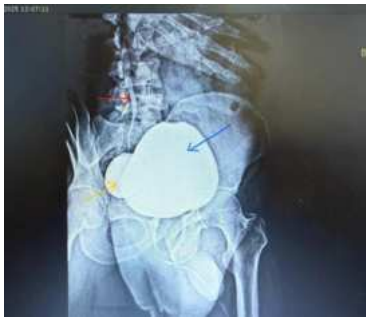

Figure 1:- VCUG (VOIDING CYSTOURETHROGRAM) Showing Reflux From Right Vesicoureteric Junction (RED ARROW) With Hutch Diverticulum(YELLOW ARROW)

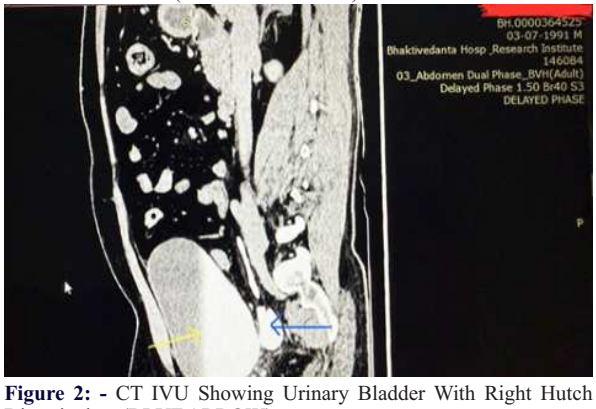

Figure 2: - CT IVU Showing Urinary Bladder With Right Hutch Diverticulum (BLUE ARROW)

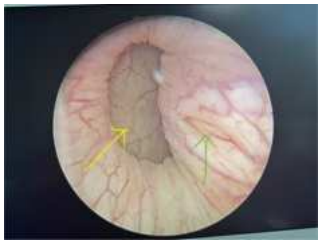

Figure 3: - RIGID CYSTOSCOPY Showing Right Ureteric Orifice (GREEN ARROW), Hutch Diverticulum (YELLOW ARROW)

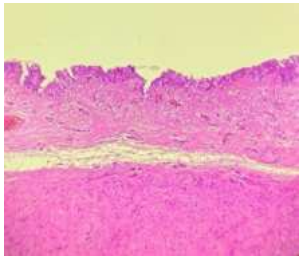

Figure 4:- Final Histopathology Report Showing Transitional Epithelium Of Diverticular Wall

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