



BEYOND THE BLADDER: UNEXPECTED DISCOVERY OF INTESTINAL MALROTATION DURING RADICAL CYSTECTOMY WITH ILEAL CONDUIT – A UROLOGIST'S PREDICAMENT

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ABSTRACT The unanticipated and incidental discovery of intestinal malrotation during radical cystectomy can generate few queries regarding the anatomic construction of the urinary diversion and can be a dilemma for the operating urologist. We describe such a case in which we navigated this anatomic surprise with simplicity and avoided unnecessary additional surgical manoeuvres, thus proving the feasibility of conventional anatomic approach to conduit creation in such an unforeseen situation.

KEYWORDS :

INTRODUCTION:

Radical cystectomy with urinary diversion remains the cornerstone in the urologist's armamentarium for the treatment of muscle-invasive bladder cancer. However, even routine uro-oncologic procedures may harbour unforeseen challenges that can test the surgeon's adaptability and acumen. In the realm of urologic surgery, the identification of incidental anatomical anomalies, particularly those beyond the purview of the genitourinary system can lead to intraoperative surprises and trigger the need for additional decision making.

This case report describes a unique scenario encountered during a radical cystectomy with ileal conduit formation – the discovery of intestinal malrotation.

Classically considered a paediatric condition, intestinal malrotation involves an abnormal positioning of the bowel during embryonic development, leading to potential anatomical and functional complications. Its detection during adult urologic surgery introduces an unexpected dimension to the urologist's scope, requiring swift decision-making and interdisciplinary collaboration.

MATERIALS & METHODS:

A 62-year-old gentleman presented to the emergency department with hematuria, which, upon evaluation was attributable to a mass lesion in the urinary bladder. The patient subsequently underwent transurethral resection of the bladder tumour and received neo-adjuvant chemotherapy for muscle-invasive bladder cancer. Thereafter, he was planned electively for radical cystectomy with urinary diversion, after undergoing a contrast-enhanced computed tomography of the abdomen and pelvis.

After the radical cystectomy was done, upon inspecting the right iliac fossa, the cecum and ascending colon were nowhere to be found, and the right iliac fossa was empty. Upon careful inspection of the small bowel and tracing it to the caecum, the caeco-colic junction was found in the left upper quadrant (Fig. No. 1), without any associated pathological twist in the mesentery, thus prompting a diagnosis of a non-obstructing variety of intestinal malrotation. An intra-operative surgical gastroenterological consult was obtained, and it was decided to not do any additional procedure for the asymptomatic rotational intestinal anomaly.

An ileal segment of approximately 15 cm was isolated, starting 15 cm proximal to the ileo-caecal junction, and an ileal conduit was constructed using refluxing uretero-ileal anastomoses, with the stoma situated in the right lower quadrant of the abdomen, as is routinely done for other cases.

A side-to-side ileo-ileal anastomosis for restoration of bowel continuity was done, using GIA™ (Medtronic, Dublin, Ireland) stapler. Post-operatively, the patient had paralytic ileus and was started on parenteral nutrition until normal bowel motility recovered on POD-5.

DISCUSSION:

Intestinal malrotation, a rare form of intestinal obstruction, affects around 1 in 6000 people^[1] and is often detected and treated in the neonatal or early childhood stages.

Although this syndrome seldom manifests in adults, it is frequently discovered by accident during diagnostic or surgical procedures for other illnesses. It is classified into four types according to its form^[2]. The Ladd procedure^[3] is performed in children with intestinal malrotation, which is detected on the basis of obstruction caused by the midgut volvulus.

There is only one case report citing the presence of intestinal malrotation during a radical cystectomy^[4], however, the authors had to perform the Ladd procedure to release the pathological adhesions and bands. This is the first case report highlighting the fact that such a procedure may be unnecessary in the event of an uncomplicated and non-obstruction type of intestinal malrotation discovered incidentally.

Asymptomatic intestinal malrotation can rarely be diagnosed using imaging tests. Abnormal intestinal placement and the superior mesenteric vein (SMV) rotation sign (the SMV running on the left side of the superior mesenteric artery), as observed on gastrointestinal contrast CT, are useful for diagnosing this condition^[5].

The unexpected discovery of intestinal malrotation during a radical cystectomy with ileal conduit creation introduces a unique challenge to the urologist, prompting reflection on the clinical implications and management strategies associated with this uncommon finding.

A few questions still remain elusive & unanswered: Whether the creation of an iso-peristaltic versus anti-peristaltic ileal segment would bear any future implications? Could the anti-peristaltic segment lead to more incidence of post-operative pyelonephritis? Does the direction of peristalsis have any post-operative implication at all? Does the bolus of urine generate a peristaltic wave (towards the stomal site, irrespective of the lie of the segment) in the conduit, or does the conduit serve just as a passive anatomic outlet for the urine?

CONCLUSION:

The case unfolds the intricacies of navigating unexpected anatomical variations, emphasizing the importance of a comprehensive understanding of abdominal anatomy for urologic surgeons.

Additionally, it underscores the significance of collaboration between urologists and surgical gastroenterologists in managing unforeseen intraoperative complexities, ensuring optimal patient outcomes. This report serves as both a testament to the unpredictable nature of surgical interventions and a guide for urologists who may encounter similar scenarios in their practice.

Figures:

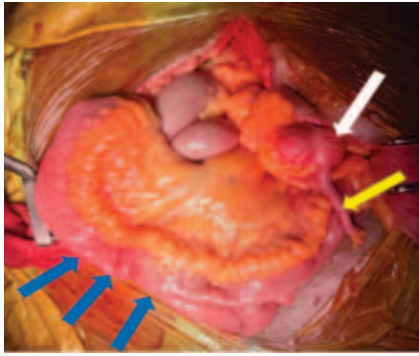


Fig. No.1: Figure depicting the caeco-colic loop (*white arrow*) with appendix (*yellow arrow*) situated anterior to the SMA trunk in the left upper quadrant, and the ileal loop isolated for conduit creation (*blue arrows*).

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