

**LAPAROSCOPIC DUODENOJEJUNOSTOMY-INDUCED INTERNAL HERNIATION IN SUPERIOR MESENTERIC ARTERY SYNDROME: LEARNING FROM MISTAKES**

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ABSTRACT Superior Mesenteric Artery (S.M.A.) Syndrome is a rare gastrointestinal disorder characterized by the compression of the third portion of the duodenum between the abdominal aorta and the overlying superior mesenteric artery. This compression results from the loss of the normal angle between the aorta and the superior mesenteric artery due to a decreased mesenteric fat pad. This poses diagnostic challenges and often necessitates emergent interventions such as Laparoscopic Duodenojejunostomy (D.J.). This case report highlights a rare and catastrophic complication following such a procedure in a young, under-nourished male with S.M.A. Syndrome. One week postoperatively, the patient presented with projectile vomiting, prompting diagnostic laparoscopy to confirm herniation of ileal loops through a mesenteric defect, which was managed by repositioning the herniated loops and closure of the defect. This case emphasizes the importance of recognizing internal herniation in post-DJ patients and advocates for a multidisciplinary approach, intensive care support, and vigilant monitoring, especially in emergent surgical scenarios. Early intervention and corrective measures resulted in a favourable outcome, underscoring the significance of learning from mistakes in managing S.M.A. Syndrome complications.

KEYWORDS : Superior Mesenteric Artery Syndrome, Duodenojejunostomy, Internal Herniation, Original Research

INTRODUCTION

Superior Mesenteric Artery (S.M.A.) Syndrome stands as a rare yet clinically challenging gastrointestinal disorder characterized by the compression of the duodenum between the abdominal aorta and the S.M.A. (Lee et al., 2012).

The syndrome, resulting from a decreased mesenteric fat pad and altered angle between the aorta and superior mesenteric artery, poses significant diagnostic hurdles and often necessitates urgent surgical interventions, such as Laparoscopic Duodenojejunostomy (D.J.) (Gersin & Heniford, n.d.).

With a focus on the potential complications associated with surgical remedies, this exploration advocates for heightened awareness and a multidisciplinary approach to managing S.M.A. Syndrome, emphasizing the importance of refining surgical strategies and fostering a more comprehensive comprehension of this intricate gastrointestinal anomaly.

Case Report

This case report presents a comprehensive analysis of a postoperative complication in a young, under-nourished male with a known case of S.M.A. Syndrome who underwent Laparoscopic D.J. with Roux-en-Y Anastomosis.

Approximately one week following the surgical intervention, the patient exhibited a series of alarming symptoms, primarily characterized by multiple episodes of projectile vomiting persisting for two days. The emesis, bilious and non-blood-tinged in nature, was seen soon after the ingestion of liquids.

After the emergence of symptoms, a conservative management strategy was implemented, involving Ryle's tube aspiration, fluid administration, and total parenteral nutrition to address the patient's nutritional needs. Diagnostic evaluations, including endoscopy, revealed pertinent findings such as a small hiatus hernia, reflux esophagitis, visualization of a single duodenojejunostomy loop, and dilation of the jejunal loop. Further investigations through diagnostic laparoscopy uncovered the presence of herniated ileal loops through a mesenteric defect [Fig. 1 & 2].

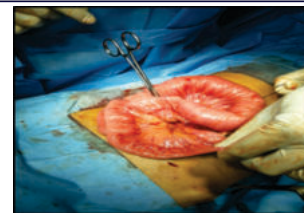


Fig. 1 Herniating Ileal loops



Fig. 2 The defect in the mesentery

In response to these findings, an exploratory laparotomy was conducted to assess the viability of the herniated ileal loops and effect their repositioning, concomitant with the closure of the identified mesenteric defect [Fig. 3]. Notably, the postoperative course transpired uneventfully, leading to the patient's discharge on postoperative day eight.



Fig. 3 Repositioning of the Ileal loops and closure of the defect

This case underscores the complexity and potential complications associated with Laparoscopic D.J. in the context of S.M.A. Syndrome. The emergence of projectile vomiting, while a rare occurrence, served as a crucial indicator of internal herniation, prompting timely intervention—the conservative management strategy aimed at mitigating immediate risks and sustaining the patient's nutritional status. Diagnostic modalities, including endoscopy and laparoscopy, played pivotal roles in unravelling the underlying pathology of herniated ileal loops through a mesenteric defect.

The subsequent exploratory laparotomy, marked by repositioning the herniated ileal loops and closure of the mesenteric defect, demonstrated the successful resolution of the complication. Notably, the uneventful postoperative period and the patient's subsequent discharge highlight the corrective measures' effectiveness.

This case report contributes to the medical literature by providing insights into the diagnostic and therapeutic challenges associated with complications following Laparoscopic D.J. in S.M.A. Syndrome patients. Furthermore, it emphasizes the significance of a multidisciplinary approach, encompassing conservative management strategies, diagnostic precision, and surgical expertise, in ensuring favourable patient outcomes in such complex clinical scenarios.

DISCUSSION

The historical background of S.M.A. Syndrome, observed by Rokitsansky in 1861, highlights the potential compression of the duodenum by superior mesenteric vessels (Lee et al., 2012). Diagnostic criteria involve assessing the aortomesenteric angle (25° to 60°) and aortomesenteric distance (10–28 mm) (Chang et al., 2017). S.M.A. Syndrome, characterized by mesenteric fat pad loss, manifests with symptoms such as weight loss, nausea, vomiting, and post-prandial pain (Gersin & Heniford, n.d.). It is rare, affecting 0.0024 to 0.34% of the population, predominantly young women (10–30 years) (Barkhatov et al., 2018; Gersin & Heniford, n.d.).

Primary management focuses on weight restoration to increase the aortomesenteric angle (Sabry et al., 2022). When unsuccessful, the laparoscopic approach is preferred over the open alternative due to its benefits, including shorter hospital stays, low morbidity, high success rates, shorter operative times, improved optics, rapid recovery, and minimal postoperative analgesia (Pottorf et al., 2014; Sun et al., 2015). Its minimally invasive nature avoids transverse colon complications (Prieto et al., 2021).

The presented case highlights S.M.A. Syndrome complexity and Laparoscopic D.J. complications. Projectile vomiting postoperatively prompted a timely intervention. Conservative measures addressed immediate risks, including Ryle's tube aspiration, fluids, and total parenteral nutrition. Diagnostic endoscopy and laparoscopy revealed herniated ileal loops, leading to a successful exploratory laparotomy, an uneventful recovery, and timely discharge.

This case report contributes valuable insights to medical literature, addressing the intricacies of Laparoscopic D.J. in S.M.A. Syndrome. Emphasizing a multidisciplinary approach underscores the role of conservative management, precise diagnostics, and surgical expertise for favourable outcomes in this complex clinical landscape. The successful resolution highlights the importance of continuous learning and timely corrective measures in managing S.M.A. Syndrome-associated complexities.

Statements And Declarations

Competing Interests: The authors have no relevant financial or non-financial interests to disclose.

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Ethical Approval: Approval was obtained from the Institutional Ethics Committee. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Data Availability: This study encompasses all data generated or scrutinized within its scope, comprehensively integrated within this article.

Consent to participate: Written informed consent was obtained from the patient.

Consent to publish: The patient has consented to the submission of the case report to the journal.

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