

A Rare Case of Internal Hernia of Partial Volvulus Right Colon through Foramen of Winslow & Its Management by Laparoscopic Approach

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Abstract

Case Report

Introduction: Foramen of Winslow hernias is a rare and critical form of internal hernia that can present in individuals with signs and symptoms of bowel obstruction. This case report entails the operative management of a right-side colon herniation through the foramen of Winslow in an elderly female with a previous history of Hysterectomy. The patient presented with worsening abdominal pain, nausea, and multiple episodes of vomiting. Delay in diagnosis often results in higher morbidity and mortality. **Case Presentation:** A 46 years old female, presented with acute upper abdominal pain, constipation, and loss of appetite for 24 hrs. Computed tomography showed foramen of Winslow hernia with partial volvulus right colon as content with incomplete rotation of gut which was managed laparoscopically without the need for bowel resection. The patient recovered well with no postoperative complications and no immediate technical failure of repair confirmed by a cross-sectional study. The patient is doing well on follow-up. **Discussion:** Herniation of the bowel through the foramen of Winslow is very rare, comprising only 8% of all internal herniations. Historically, the majority of cases were diagnosed intra-operatively during laparotomy. Bowel resection was often done in cases of ischemia. In recent times, early diagnosis & increasing expertise in minimal access surgery that is resulting in a lower morbidity and mortality rate along with other added benefits of minimal access surgery. **Conclusion:** Herniation contents through the foramen of Winslow is a rare condition. Patients will present with sudden onset abdominal pain. Early imaging helps to recognise the diagnosis and could prevent bowel ischemia & its management with minimal access surgery leads to early recovery, shorter hospital stay, less pain & early return to work.

Keywords: Case Report, Foramen of Winslow, Internal Hernia, Minimal Access surgery.

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1. INTRODUCTION

Herniation of the bowel through the foramen of Winslow is a rare kind of internal hernia. It comprises only 8% of all internal herniations and 0.08% of all hernias [1]. Only 150 cases of the foramen of Winslow hernia have been described in the literature till date. Increased incidence is seen in the third and sixth decade of life [2]. Internal hernias occur when there is a persistent or intermittent displacement of one or more viscera through the intra-peritoneal orifice.

Internal hernia is defined as “protrusion of intestine into large fossa, cystic space, or defect that may cause bowel obstruction resulting in symptoms like abdominal distension, nausea, multiple episodes of vomitings.” In cases of intestinal necrosis, intestinal

resection is necessary. These kinds of hernias are not visualised externally. There are two types of internal hernias classified: Peritoneal fossa and peritoneal defect. The former includes paraduodenal hernia, paracaecal hernia, sigmoid fossa, and foramen of Winslow, and the latter includes defects of the mesentery, omentum, and uterus band [3]. Internal hernias through the foramen of Winslow, also known as Blandin’s hernia. Initially described by Blandin in 1834, <10% of cases are diagnosed preoperatively leading to high mortality rates when care is delayed reaching up to 50% [4].

2. CASE PRESENTATION

A referred 46 years old female patient with a previous operative surgical history of vaginal hysterectomy 17 years back presented to Adesh

emergency surgical department (ED) with a history of sudden onset abdominal pain, multiple episodes of vomiting, and nausea for 2 days. On examination, the abdomen was distended and slightly tender in the epigastrium. Foley's urinary catheter and Ryle's tube in situ. Past history of episodic abdominal discomfort for last 2 years present which was relieved by medication prescribed by a local private practitioner. CT Scan of the

abdomen and pelvis region with oral and IV contrast was done in the ED.

The CT scan of the abdomen showed Midgut Malrotation with Reversal of Superior Mesenteric Artery and Superior Mesenteric Vein, Foramen of Winslow Hernia containing grossly distended right-sided colon in gastro-hepatic recess with volvulus, no evidence of pneumoperitoneum was seen, large Riedel's Lobe of Liver (Figure 1, 2, 3).

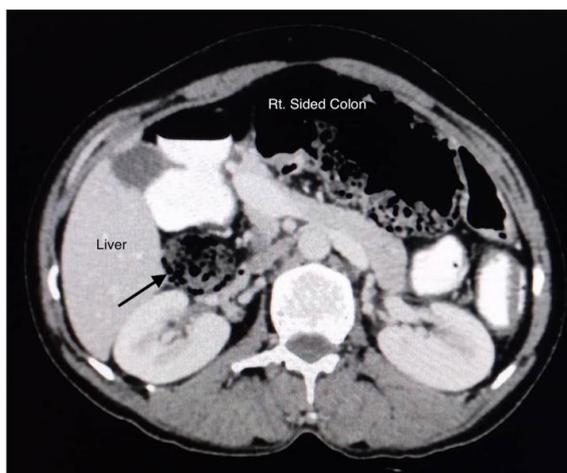


Figure 1: Axial Section of the abdomen showing Right Sided colon in the Gastro-Hepatic Recess with Partial Volvulus



Figure 2: Reversal of SMA (Superior Mesenteric Artery) and SMV (Superior Mesenteric Vein)

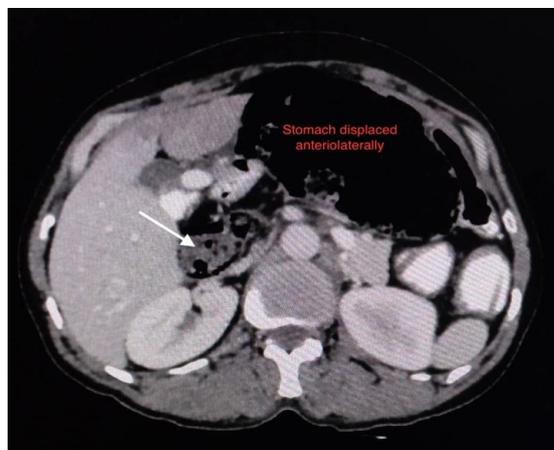


Figure 3: Axial Section of CECT (Contrast Enhanced Computed Tomography) Showing Dilated Foramen of Winslow

The patient was submitted for an urgent laparoscopic procedure. For the surgery, two 10mm port and two 5mm port were placed on the supra-umbilical,

supra-pubic region, right and left mid-axillary line respectively (Figure 4).

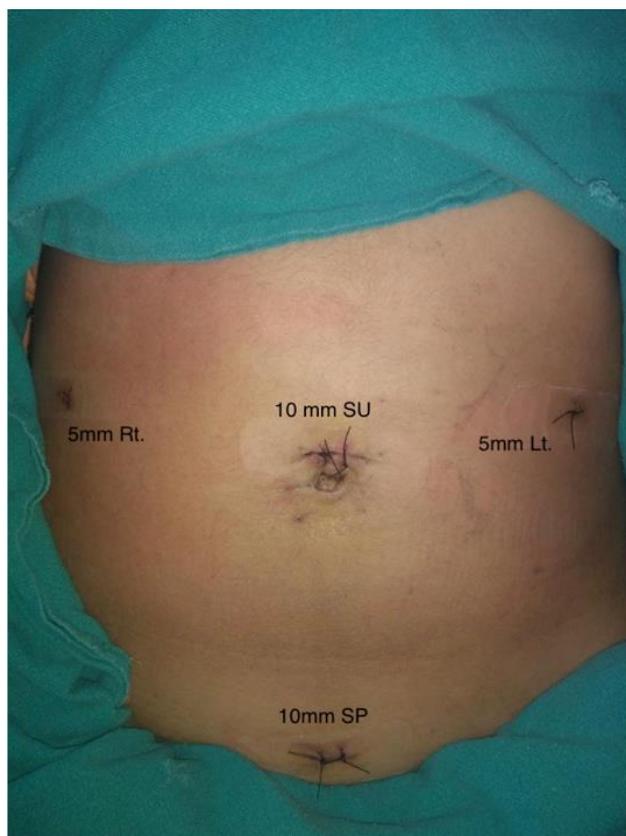


Figure 4: Sites of Port Placement. (Two 10mm port were placed on supra-umbilical and supra-pubic region, two 5mm port were placed on right and left mid-axillary line at the level of umbilicus)

On diagnostic laparoscopy intra-operative findings were herniating hepatic flexure and ascending colon, rest of the proximal side of the distended right

colon through Foramen of Winslow, the herniated colon was axially rotated with bowel congestion probably due to venous outflow obstruction (Figure 5).

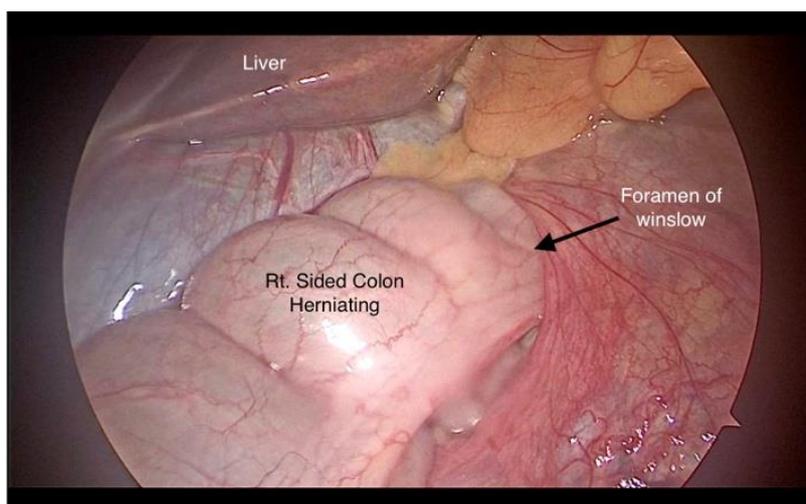


Figure 5: Intra-operative Image showing Right Sided Colon going into Foramen of Winslow

With gentle traction, hernial contents were reduced completely and primary closure of the foramen of Winslow using 3-0 barbed suture was done (Figure 6),

omentopexy of the hernial orifice was not feasible because there was no significant intra-peritoneal free omentum present to do the same.

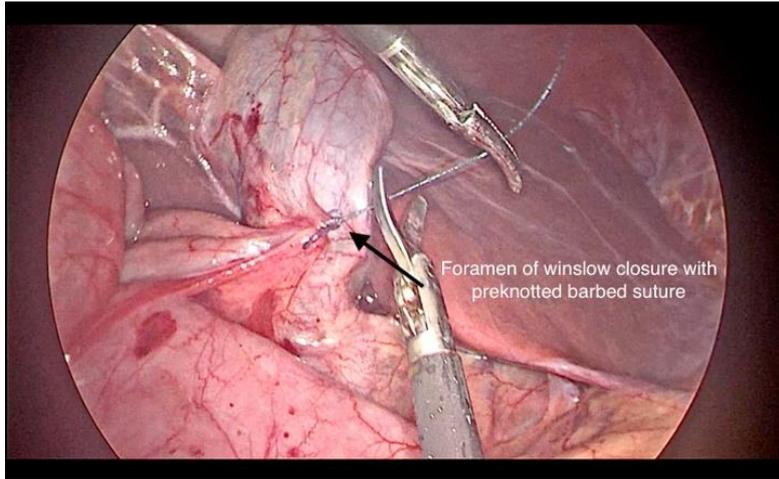


Figure 6: Foramen of Winslow Closed with Barbed Suture 3-0

There was no need for bowel resection since there was appropriate viability of the colon seen grossly after detorsion. Due to a band attached to the appendix suspected to become a leading for this hernia of the

colon, the appendix was mobilised and ligated at the base with cat-gut chromic pre-knotted loop suture (endoloop) and cut (Figure 7).

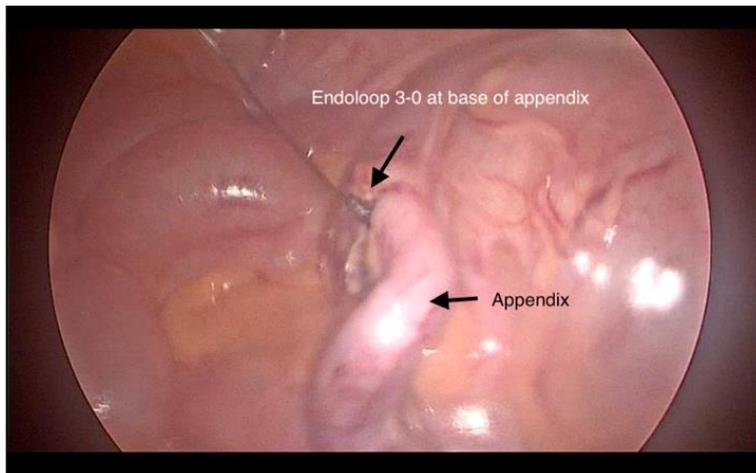


Figure 7: Endoloop 3-0 Placed at the base of Appendix

Caecopexy done with Prolene 3-0 trans-fascial suture in right iliac fossa. Intra-abdominal drain was

placed which was removed after 24 hrs due to nil output (Figure 8).

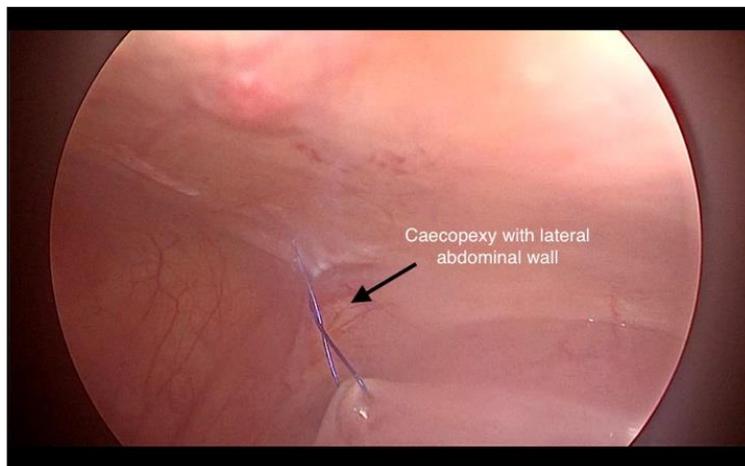


Figure 8: Caecopexy done with the Lateral abdominal wall

The patient started tolerating orally liquids and semi-solids after 48 hrs of surgery. The patient was discharged on the 5th postoperative day after confirming no complication. Now the patient is doing well with no recent complaints on follow-up.

3. DISCUSSION

Foramen of Winslow (*Latin: foramen epiploicum*) is also known as Epipholic Foramen or omental foramen; named after the anatomist Jean-Jacques Bérnigne Winslow. The foramen of Winslow is defined superiorly by the peritoneum covering the caudate lobe of the liver and posteriorly by the peritoneum covering the inferior vena cava. The inferior portion is defined by the peritoneum covering the commencement of the duodenum and hepatic artery. Anteriorly there is a free border of lesser omentum ie, comprising two layers and within these layers, there is a portal triad (common bile duct, hepatic artery, and hepatic portal vein). The foramen of Winslow is the only natural communication between the greater peritoneal cavity and the lesser sac [5]. The most common site of involvement is Small Intestine (53-63%), the Cecum-terminal ileum (25-30%), Transverse Colon (7%). Rarely there is a Herniation of the gallbladder, Meckel's Diverticulum, or small bowel Diverticulum [1].

A late diagnosis is associated with a high mortality rate, estimated at ~50% [6]. This mortality rate has been reduced to ~5% with early surgical intervention and the use of computed tomography. Even with the widespread use of cross-sectional imaging, this type of internal hernia remains extremely difficult to diagnose with potentially life-threatening complications, such as strangulated bowel [4].

Several predisposing factors have been hypothesized. The most important factor appears to be an enlarged foramen of Winslow.

Other frequently cited predisposing factors include:

1. An abnormally long small bowel mesentery, which allows intestinal hypermobility, within the peritoneal cavity;
2. Failure of the secondary fusion (retroperitonealization) of the ascending colon to the posterior abdominal wall, which allows the cecum to migrate to the foramen of Winslow;
3. Sudden changes in intra-abdominal pressure; and a common mesentery for the entire intestine [2].
4. Incidence of internal hernias is increasing because of the use of laparoscopic Roux-en-Y Gastric Bypass for weight loss and management of obesity-related morbidity [10].

Clinical Features

Usually males are affected more than females and it's seen in the 2nd-6th decade of life. An internal

hernia usually presents with variation of symptoms. Variation of symptoms is associated because of the differences between the involved segments and the amount of the herniated intestines. Symptoms Includes:

1. Abdominal Distension
2. Crampy Abdominal Pain
3. Hyperactive Peristalsis (may be present or not; it's absent because of the pressure on the distal stomach that prevents the passage of gas into the distal bowel) [7].

First laparoscopic management through the foramen of Winslow internal hernia was reported in 2009. The laparoscopic approach was done in 16 other cases (till 2019) reported to be safe and feasible, even in cases where the viability of the bowel was compromised. Therefore, it is recommended to start with minimal access surgery in cases of early presentation of the foramen of Winslow [8]. Less postoperative pain, fewer operative, and post-operative major complications, shortened hospital stay, faster recovery times, less scarring, less stress on the immune system, smaller incision, and for some procedures reduced operating time and reduced costs are the advantages of minimal access surgery [9].

In this case there could have been failure of the retroperitonealization which resulted in hyper mobilisation of the caecum & hence resulted in internal hernia. Also, due to acute presentation the viability of colon was preserved. Therefore, there was no need for the bowel resection.

4. CONCLUSION

This study shows that a patient with an internal hernia can be easily managed with minimal access surgery. This leads to lesser morbidity and mortality. The patient with late presentation and late diagnosis perforation, peritonitis, shock, exploratory laparotomy with resection, and anastomosis ileostomy/colostomy are done. Depending on the herniation content and viability of the bowel. Due to advances in minimal access surgery, there is less postoperative pain, fewer operative, and post-operative major complications, shortened hospital stay, faster recovery times, less scarring, less stress on the immune system, and a smaller incision.

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