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RESEARCH ARTICLE

A RARE POST-GASTRECTOMY COMPLICATION: EFFERENT LOOP VOLVULUS

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Abstract

Efferent loop syndrome (ELS) is a rare postoperative complication that may occur after Billroth II or Roux-en-Y gastric reconstruction. Although less frequent than afferent loop syndrome, it can lead to severe obstructive symptoms requiring urgent surgical management.We report a case of acute efferent loop syndrome caused by volvulus of the alimentary limb in a patient with a history of partial gastrectomy and Billroth II gastrojejunostomy. The patient presented with acute intestinal obstruction, and contrast-enhanced CT imaging revealed a markedly distended efferent loop with radiological signs suggestive of ischemia. Emergency surgery confirmed a volvulated and necrotic jejunal loop, which was resected before reconstruction with a new Billroth II anastomosis. Postoperative evolution was uneventful.This case highlights the importance of considering ELS in the differential diagnosis of post-gastrectomy patients presenting with obstructive symptoms. Early recognition and timely surgical intervention remain essential to prevent ischemic complications and improve outcomes.

Introduction:-

Gastric cancer remains one of the most prevalent malignancies worldwide, with nearly one million new cases diagnosed each year, ranking as the fourth most common cancer globally [1]. Surgical resection, often combined with chemotherapy and radiotherapy, remains the cornerstone of curative treatment [3]. Despite major advances in minimally invasive surgery, gastrectomy is still associated with significant postoperative morbidity and mortality [6].Among the various postoperative complications, loop syndromes are uncommon but potentially serious. Efferent loop syndrome (ELS) is a rare mechanical obstruction of the alimentary limb occurring distal to a Billroth II or Roux-en-Y anastomosis [12,15]. It is less frequent than afferent loop syndrome and may occur either early, due to anastomotic edema or kinking, or late, due to adhesions, strictures, intussusception, internal hernias, or volvulus, as in our case [9,8].Because its clinical presentation is nonspecific and may overlap with other postoperative complications, ELS can be challenging to diagnose. Prompt identification is essential to prevent ischemia or necrosis of the obstructed limb and to ensure timely surgical management [15].The aim of this report is to describe a rare case of acute efferent loop syndrome caused by volvulus of the alimentary limb after Billroth II reconstruction, and to discuss its diagnostic features, underlying mechanisms, and therapeutic management [12,14].

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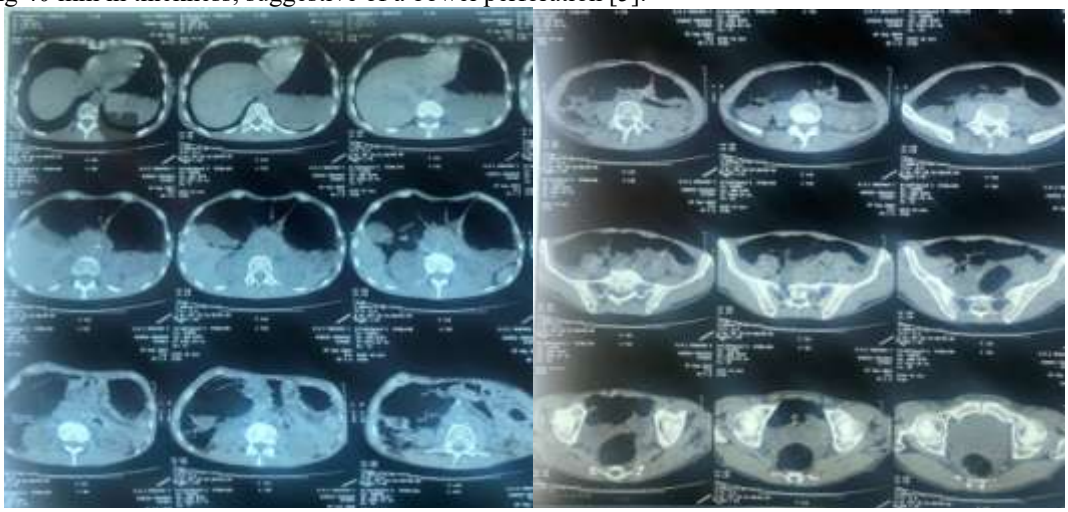
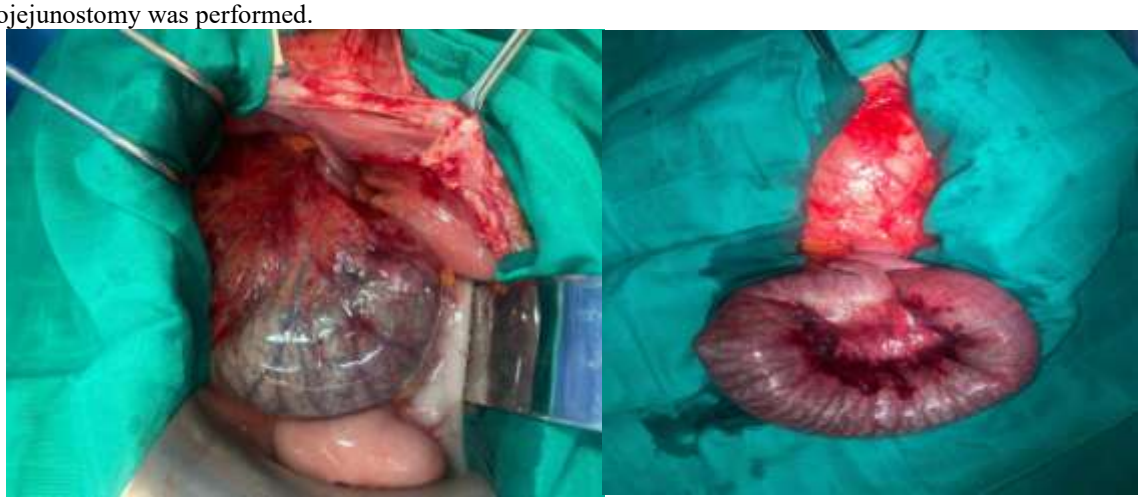
Case Presentation:-

A 46-year-old man with a history of a neuroendocrine gastric tumor with liver metastases, who had previously undergone a partial gastrectomy with Billroth II gastrojejunostomy three years ago, was admitted to the emergency department with abdominal pain, vomiting, and cessation of bowel movements and gas. One week earlier, he had undergone thermal ablation for his liver metastases.Clinical examination revealed a patient in good general condition, afebrile, with a distended and tender abdomen. Laboratory tests showed leukocytosis (11,000/mm³), hemoglobin at 8 g/dL, and an elevated CRP of 18.7 mg/L.An abdominal X-ray revealed central air-fluid levels, and a contrast-enhanced CT scan demonstrated pneumoperitoneum, gastric stasis, and a distended alimentary loop measuring 40 mm in thickness, suggestive of a bowel perforation [5].



Figures 1 and 2.

Contrast-enhanced abdominal CT scan showing jejunal distension upstream of the gastrojejunostomy with gastric stasis and pneumoperitoneum, suggesting bowel obstruction due to volvulus.Emergency surgery was performed, revealing a necrotic volvulus of the alimentary loop. The necrotic loop was resected, and a new Billroth II gastrojejunostomy was performed.



Figures 3 and 4.
Intraoperative view showing a volvulus of the efferent (alimentary) loop with extensive necrosis of the involved intestinal segment.

Discussion:-

Pathophysiology and Diagnosis:-

Efferent loop syndrome (ELS) refers to a mechanical obstruction occurring distal to a Billroth II gastrojejunostomy. It is a rare condition compared with afferent loop syndrome and may present either acutely or chronically depending on the underlying cause [12]. Symptoms can range from mild postprandial discomfort to severe abdominal pain,

nausea, bloating, and vomiting [12].The decreasing incidence of ELS in recent years is linked to the decline in the use of Billroth II reconstructions, replaced by Roux-en-Y techniques that better preserve intestinal continuity [7]. Early postoperative obstruction is usually due to edema, kinking, or technical issues at the anastomotic site [7]. In contrast, late-onset obstruction most commonly results from adhesions, strictures, internal hernias, intussusception, or, rarely, volvulus of the alimentary limb [8]. Volvulus is a surgical emergency, as twisting of the intestine can compromise blood supply and lead to necrosis if not promptly managed [12].Clinical manifestations vary from mild postprandial discomfort to acute intestinal obstruction with vomiting, abdominal distension, and cessation of bowel movements [12]. Differential diagnoses include afferent loop syndrome, anastomotic stricture, or tumor recurrence [5,6].Imaging, particularly contrast-enhanced CT, is crucial for diagnosis. It demonstrates dilatation of the efferent limb, signs of ischemia or necrosis, and helps distinguish it from afferent loop obstruction. Multiplanar CT reconstructions are particularly helpful for evaluating postoperative anatomy [4,15].

- **Treatment Options:-**

Management of ELS depends on the underlying cause and the clinical severity [13]. In cases of complete obstruction or when ischemia is suspected, surgical intervention is mandatory.

Surgicalstrategiesinclude:

- Resection of the necrotic segment with reconstruction via a new Billroth II anastomosis (as in our case) [14]
- Conversion to a Billroth I anastomosis [14]
- Jejunojejunostomy to bypass the obstructed segment [14]

When obstruction is caused by anastomotic edema, mild adhesions, or inflammatory changes, conservative management may be attempted.

This mayinvolve:

- Nasogastricdecompression
- Proton pumpinhibitors
- Total parenteral nutrition
- Carefulclinical monitoring [13]

In patients unfit for surgery, endoscopic stent placement can be considered as a palliative option to relieve obstruction [9].In our case, exploratory laparotomy revealed a volvulus of the efferent (alimentary) limb caused by an adhesive band, resulting in necrosis. Resection of the affected segment and reconstruction with a new Billroth II anastomosis led to full recovery. This case highlights the importance of early recognition, accurate imaging, and prompt surgical management to prevent serious complications [12,14].

Conclusion:-

Efferent loop syndrome is a rare but potentially life-threatening complication following Billroth II reconstruction. Among its various etiologies, volvulus of the alimentary limb represents an exceptional cause that should be considered in patients presenting with acute bowel obstruction after gastrectomy. Early recognition based on clinical suspicion and radiological findings is essential to prevent ischemic complications.Surgical exploration remains the cornerstone of management, as it allows both confirmation of the diagnosis and definitive treatment through resection of the necrotic loop and reconstruction of the anastomosis [14]. Although endoscopic or conservative approaches may be used in selected cases, prompt surgical intervention offers the best outcomes in cases of volvulus or complete obstruction [12].Our case highlights the importance of considering efferent loop syndrome in the differential diagnosis of post-gastrectomy obstructions and illustrates how a volvulus of the alimentary limb can lead to this uncommon but severe condition requiring urgent surgical treatment [12].

Ethics Approval and Consent to Participate

We gained the written informed consent of the patient to use her clinical information and photographic material for the publication.

Conflicts of Interest

The authors declare no competing interests.

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Consent:-
As perinternational standard or universitystandard, patient(s) written consent has beencollected and preserved by the author(s).

Ethical approval:-
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Competing interests:-
Authors havedeclared that no competing interestsexist.

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