



## AFFERENT LOOP SYNDROME IN A PATIENT WITH PAST HISTORY OF BILLROTH II PROCEDURE FOR ANTROPYLORIC GROWTH STOMACH.

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### KEYWORDS :

#### CASE REPORT

Afferent loop syndrome in a patient with past history of billroth II procedure for antropylic growth stomach.

#### HISTORY

A 40-year-old woman presented to our emergency department with diffuse abdominal pain, nausea, and vomiting for few days. She had past history of surgery near total gastrectomy with gastrojejunostomy for antropylic growth approximately 1 years back. At physical examination, the patient had mild diffuse abdominal tenderness. Otherwise, physical examination results were unremarkable. Clinically important laboratory findings included an alkaline phosphatase level of 360 U/L (normal, 40–150 U/L), an aspartate transaminase level of 472 U/L (normal, 5–38 U/L), and alanine transaminase level of more than 326 U/L (normal, 0–42 U/L). The patient subsequently underwent various imaging modalities like radiographs chest PA, abdomen radiograph AP (Fig 1) ultrasound abdomen pelvis (Fig 2) and abdominopelvic computed tomography (CT) (Fig 3 & 4)



**Figure 1;** AP radiograph Abdomen showing gasses and distended bowel loops in RHC and left lumbar area.



**Figure 2;** Ultrasound Abdomen in a patient with afferent loop syndrome shows dilated bile ducts (black arrow)



**Figure 3** Coronal CECT Abdomen in a patient with afferent loop syndrome following Bill roth II procedure showing dilated bile duct (small white arrow), down to the ampulla. The afferent loop (large white arrow) dilated that caused partial bowel obstruction. Efferent loop (black arrow), gastric remnant (arrow head)



**Figure 4;** Axial CECT Abdomen in a patient with dilated afferent loop (duodenum- large white arrow).

#### DISCUSSION

Afferent loop syndrome is an uncommon complication following a Billroth II procedure and occurs in approximately 0.3% of cases (1). Most cases are due to mechanical obstruction of the afferent loop from adhesions, kinking at the anastomosis site, internal hernia, stomal stenosis, malignancy, or inflammation surrounding the anastomosis (2). Obstruction of the afferent bowel with ongoing accumulation of biliary, pancreatic, and intestinal secretions results in afferent loop dilatation. The back pressure from the dilated afferent loop can cause biliary dilatation, gallbladder dilatation, and acute pancreatitis (3,4). The frequency of acute pancreatitis in afferent loop syndrome, however, has not been established in a large series, to our knowledge. Uncommonly, afferent loop syndrome can be secondary to preferential gastric emptying into the afferent loop rather than to mechanical obstruction. In this form of afferent loop syndrome, there is excessive accumulation of gastric contents, usually secondary to a left-to-right surgical anastomosis rather than a right-to-left connection (5). Another form of afferent loop syndrome that may have an upper gastrointestinal appearance similar to a left-to-right surgical anastomosis is obstruction of the efferent loop with preferential filling of the afferent loop. In the early postoperative period, anastomotic edema, hemorrhage at the origin of the efferent limb, or both can prevent gastric emptying and, similarly, result in fluid accumulation in the afferent loop.

The clinical features of afferent loop syndrome are variable and depend on whether the afferent loop obstruction is acute or chronic. Most of the findings are relatively nonspecific and include abdominal pain, nausea and vomiting, postprandial fullness, and, rarely, postobstructive jaundice. The classic presentation of chronic afferent loop syndrome has been described as bilious vomiting with relief of the abdominal pain (6). This classic presentation presumably is due to intermittent release of pressure from the afferent loop into the stomach.

Prior to CT and ultrasonography (US), radiographic barium examinations of the upper gastrointestinal tract were the primary means of assessing for afferent loop syndrome (7,8). Two classic

findings were described at radiographic upper gastrointestinal examinations. First, non filling of the afferent limb suggests afferent loop syndrome. However, this finding can be problematic in that some patients without afferent loop syndrome may have non filling of their afferent limbs (9). Second, preferential filling and retention of barium in a dilated afferent limb for at least 60 minutes is consistent with afferent loop syndrome.

CT and US are useful in establishing the diagnosis of afferent loop syndrome (10,11). The fluid-filled dilated, afferent portion of small bowel can be identified readily by means of both imaging modalities. One finding that has been described as diagnostic of afferent loop syndrome is a large transversely oriented portion of small bowel anterior to the spine in the middle of the abdomen (Fig 3) (11). The case presented in this article is particularly illustrative of this finding. The tubular nature of the dilated bowel combined with the appropriate anatomic distribution for the afferent limb is useful in distinguishing afferent loop syndrome from pancreatic pseudocysts. Complications of afferent loop syndrome such as a dilated gallbladder, biliary dilatation, and pancreatitis also are identified readily at CT and US.

In summary, afferent loop syndrome is an important diagnosis to establish, as surgery is usually necessary to relieve the mechanical obstruction and possibly revise the anastomosis of the gastrojejunostomy. CT and US play a major role in the diagnosis of this entity, as the clinical signs and symptoms are generally nonspecific

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