

Case Report

A Gastric Volvulus After the Whipple Procedure in a Pancreatic Cancer: A Case Report



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**ABSTRACT**

Vomiting and delayed gastric emptying are common complications after the Whipple surgery. In our patient, this complaint was related to gastric volvulus. Gastric volvulus is a life-threatening condition characterized by an abnormal rotation of the stomach around an axis. The first line of treatment for this disorder is surgical. We present a 67 years old male patient with a history of pancreatic cancer status after the pylorus-preserving Whipple procedure. The patient presented with nausea and vomiting after surgery. Computed tomography revealed a normal anatomic structure without any abscess or hematoma. In the barium swallow study, partial stenosis in the anastomosis site and delayed stomach emptying was diagnosed. On the 23rd day after the first surgery, we performed a detorsion of the stomach with a gastric volvulus diagnosis. Gastric volvulus could be a complication of pancreatoduodenectomy, and performing gastropexy during the Whipple surgery may prevent this complication. For evaluating treatments, best diagnostic studies, and risk factors, more studies are needed.

Keywords: Whipple, Gastric volvulus, Pancreatic cancer

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1. Background

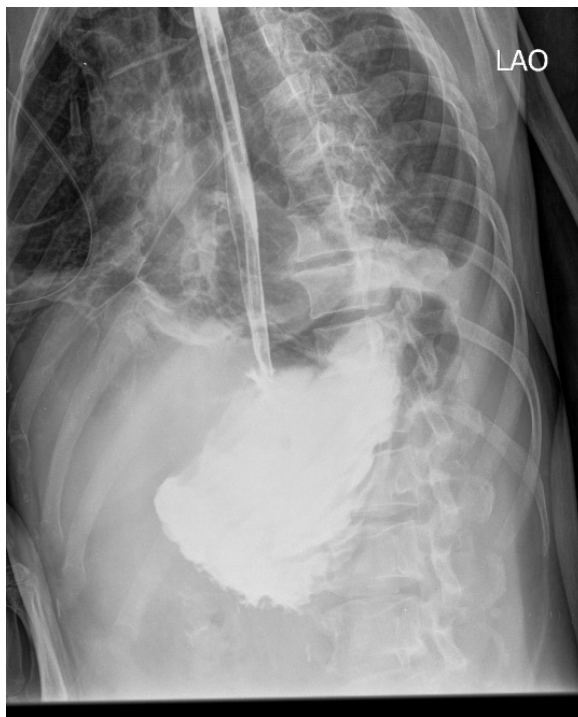
Pancreaticoduodenectomy (PD), also known as the Whipple procedure, is commonly performed for various benign and malignant tumors, including the pancreatic head and surrounding structures¹.

This procedure carries a high rate of complications, including Delayed Gastric Emptying (DGE), pancreatic fistula, bleeding, and intra-abdominal collection [1, 2]. Gastric volvulus is an abnormal rotation of all or part of the stomach around one of its axes. Rotation of the stomach along the longitudinal axis is termed organo-axial volvulus. In contrast, rotation along the transverse axis is termed mesenteroaxial volvulus, a diagnostic emergency, and therapeutic challenge because, in acute forms, it may lead to gastric strangulation with a high risk of ischemia and necrosis [3]. The first line of treatment for this disorder is surgical. This case is a known case of pancreatic head carcinoma who presented with gastric volvulus after the Whipple procedure.

2. Case Presentation

Our case was a 67-year-old male patient with pancreatic carcinoma diagnosed who went through a Whipple procedure (pancreaticoduodenectomy) and was discharged in good condition 10 days after surgery. He

presented to the emergency room 4 days after discharge with weakness, vomiting, and nausea. Nasogastric tube placement yielded 2000 mL of gastric and food fluid in the first hour. The sonographic study showed a 55 mm hypoechoic lesion on the procedure side that had a pressure effect on the gastric outlet and may cause the symptoms, but abdominal Computed Tomography (CT) revealed normal anatomic structures. In the barium swallow study, a small amount of contrast had passed to the small bowel, which confirmed partial stenosis on the anastomotic side. On day 23, after the Whipple procedure (Figures 1 and 2), the patient went through another surgery for gastric volvulus. There was a stomach volvulus around the omentum that got distorted. The patency of the anastomotic site was good and intact, and the stomach had a good blood supply. After PO (medication by mouth) tolerance on the third day after surgery, the patient was discharged without any postoperative complications. A few days later, the patient presented with melena and weakness, and he was admitted with upper Gastrointestinal (GI) bleeding, manifested by a drop in hematocrit, tachycardia, and melena. The endoscopic study revealed severe esophagitis in the lower part of the esophagus and a 1.5 cm visible vessel with active bleeding in the gastrojejunal junction of the efferent loop of jejunum; endoscopic epinephrine injection was not effective, bleeding continued, and after 4-pc injection, the patient went to the operating room. The distal part of



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Figure 1. Barium swallow fluoroscopic X-ray after 15 minutes



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Figure 2. Barium swallow fluoroscopic X-ray after 30 minutes

the duodenum and anastomosis area were removed by linear cutter stapler and reconstructed with Roux-en-Y gastrojejunostomy. The patient had no hemoglobin drop in follow-up and was discharged with good health and food tolerance on the third day after reoperation.

3. Discussion

Delayed Gastric Emptying (DGE) remains an unsolved complication after Pancreaticoduodenectomy (PD), with conflicting reports of its causes [4-6]. This condition, along with other complications, can increase healthcare costs and hospital stays. We presented a case that may add gastric volvulus into the other causes of gastric delayed emptying after PD. In this case report and one case report about cecum and gastric volvulus after PD, the patient's symptoms started in the third week after surgery. There are several case reports of cecum volvulus after PD that raises the likelihood idea of increased GI movements, but this is the first case report of gastric volvulus after the Whipple surgery [5, 7]. In referring to our patient and case reports about afferent loop syndrome and GDE, it seems that direction of the gastrojejunostomy anastomosis (left to right or right to left), time of nutrition after surgery, performing gastropexy or fixing the ascending colon to the abdomen wall may change the chance of volvulus after PD [8-10]. Further studies are recommended for evaluating the risk factors, diagnostic, and treatment procedures.

4. Conclusion

Based on this case, gastric volvulus could be one of the differential diagnoses of DGE after the Whipple procedure, and gastropexy during the surgery may reduce vomiting and post-operation PO tolerance of undergoing PD patients. A contrast study was a good way to evaluate the gastric outlet and anastomotic area in a patient with acute gastric volvulus. According to this case and several previous reports about cecum volvulus, we can see an increase in GI movements after PD.

Ethical Considerations

Compliance with ethical guidelines

There were no ethical considerations to be considered in this research.

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Authors' contributions

All authors equally contributed to preparing this article.

Conflict of interest

The authors declare no conflict of interest.

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