

A Case Of Acute Pancreatitis Secondary To Gastric Balloon Compression

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A 27 year old female presented to the emergency department with a 4 day history of left upper quadrant pain associated with nausea and vomiting.

The patient was obese and had undergone an endoscopic gastric balloon insertion procedure privately in Turkey 1 month prior, to facilitate weight loss. The patient had flown back to the UK the day after the procedure. She had not received any follow-up or diet and lifestyle advice.

The patient had no other medical history and took no regular medication.

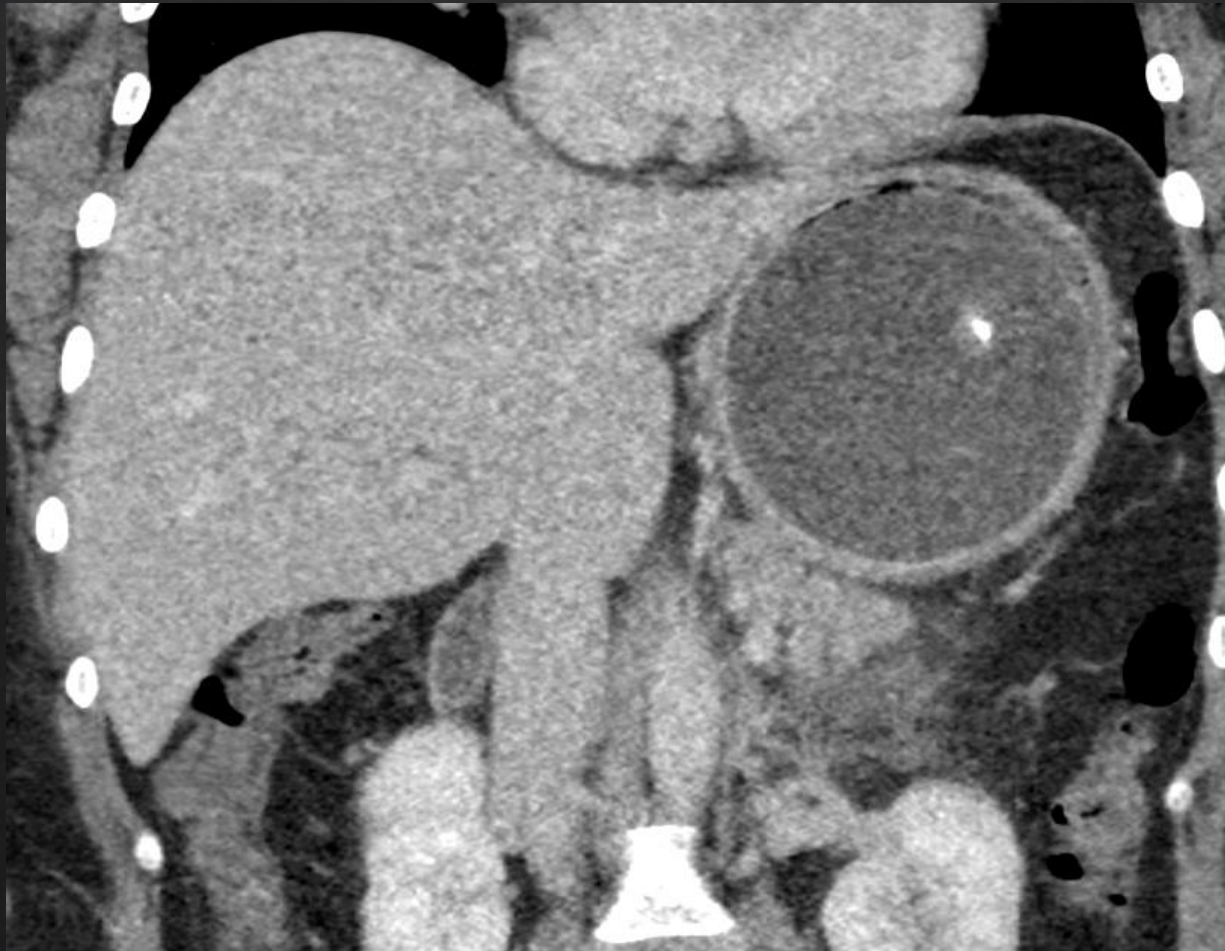
Bloods revealed WCC 13, CRP 228, Lipase 46

A CT abdomen was performed due to diagnostic uncertainty given the only mildly elevated lipase level.

There was focal inflammatory stranding and small volume free fluid surrounding an oedematous pancreatic tail. The pancreas was enhancing uniformly. Appearances were consistent with focal acute interstitial oedematous pancreatitis. No peripancreatic collection or portal vein thrombosis.



Coronal and sagittal reconstructions demonstrate compression of the inflamed pancreatic tail by the intragastric balloon. This was suggested as the cause of the focal pancreatitis at initial imaging. An ultrasound showed no evidence of gallstones and the patient did not drink alcohol. Serum calcium and triglycerides were normal. A final diagnosis of focal pancreatitis secondary to gastric balloon compression was made. The gastric balloon measured 9cm in diameter with a volume of ~400mls. This is an appropriate volume (manufacturer's recommended range 400-700mls.)



The patient was admitted and managed conservatively with IV fluids, antiemetics, analgesia and endoscopic deflation/removal of the gastric balloon. She recovered over the next 5 days. 12 months later there have been no further episodes of pancreatitis.

A literature review revealed 15 published cases of gastric balloon related pancreatitis which can occur between 1 day and 11 months following balloon insertion. The published cases occurred via 2 mechanisms:

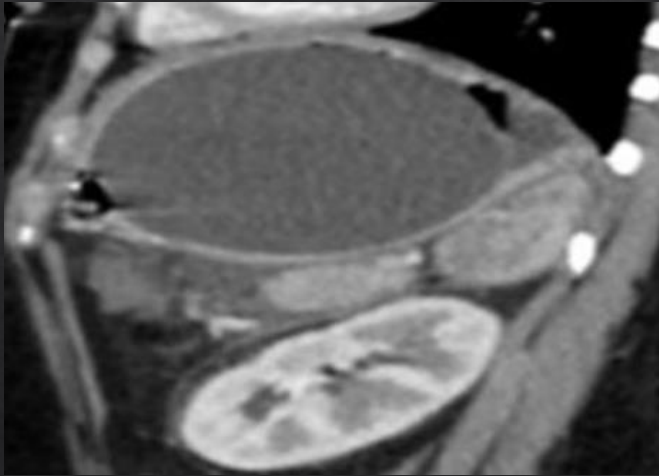
- ◇ Direct mechanical compression of the distal pancreatic body/tail (14/16 cases including ours)
- ◇ Spontaneous balloon deflation and migration into the 2nd part of the duodenum causing partial duodenal obstruction. There was mechanical compression of the pancreatic head and impaired pancreatic drainage. (2/16 cases)

There has been a significant increase in reported cases over the last decade likely due to the increasing popularity of the procedure.

Examples of both mechanisms of balloon associated pancreatitis

Direct Compression

Alkathami et al, 2023



In both cases there is direct compression of the pancreatic tail with resulting focal pancreatitis.

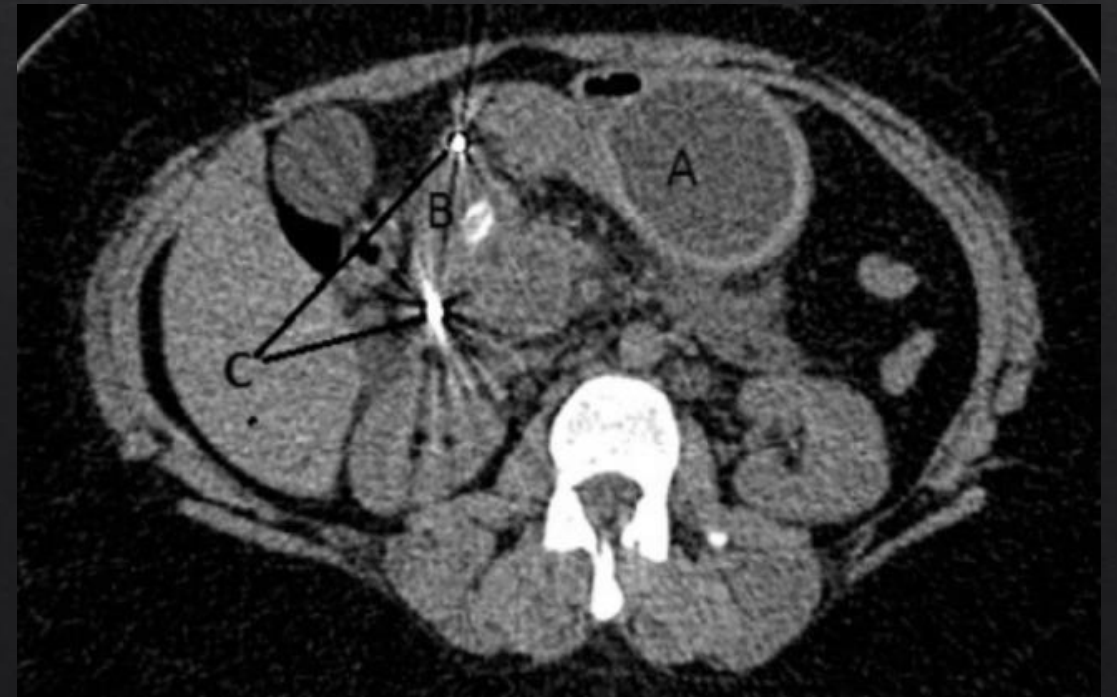
Gore et al, 2018

Duodenal Migration

Öztürk et al, 2015

A - Partially deflated balloon in the stomach.

C - Tubular deflated portion of balloon has migrated into D2 duodenum (B) causing partial duodenal obstruction. There are inflammatory changes surrounding the pancreatic head consistent with acute pancreatitis.



Endoscopic Balloon Insertion Procedure

1. The stomach is assessed endoscopically to confirm suitability for the procedure. Large hiatus hernia or mucosal ulceration are contraindications.

3. The balloon is inflated with 400-700mls of sterile saline injected via the deployment catheter.

5. The balloon remains in situ for 6-12 months. A sharp-tipped catheter is used to pierce and deflate the balloon at the time of removal.



2. The deflated balloon is inserted via the oesophagus under endoscopic visualisation.

4. The deployment catheter is retracted leaving the balloon in the stomach.



The thin wall of the balloon is made of silicone so is not well visualised on CT and the saline within the balloon can be hard to distinguish from gastric contents. The telltale sign is often the high attenuation port site where the deployment catheter is initially attached.

References

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