

A Rare Complication After Laparoscopic Gastric Banding: Connecting-Tube Penetration into the Hilus of the Kidney

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Abstract Laparoscopic adjustable gastric banding is a common operation for morbid obesity. Late complications mainly originate from either the injection port (dislocation, infection, leakage) or the gastric band (pouch dilatation, slippage, leakage, gastric erosion). Complications from the tube, connecting the port with the band, are rarely described. We report the penetration of a loose connecting tube into the kidney 8 months after removal of an infected injection port.

Keywords Gastric banding · Complication · Tubing · Migration

Case Report

A 46-year-old obese female patient presented herself with pain in the left side of her abdomen and back. Her medical history consisted of diabetes, hypercholesterolemia, appendectomy, and laparoscopic cholecystectomy. She had a laparoscopic adjustable gastric banding (LAGB) placement 1.5 years prior to presentation. This procedure was complicated after 10 months by dislocation of the reservoir, which was surgically refixed. Eight months before presentation, she developed an infection at the site of the reservoir necessitating removal of the reservoir and leaving the gastric band and tubing intraabdominal.

At presentation, the patients' pain was not related to movement, respiration, or oral intake. Her weight loss was

18 kg in the last year despite removal of the reservoir. She also complained of pyrosis. Physical examination showed a cicatricial hernia in the left upper quadrant. There were no further abnormalities. Her BMI was 33.9. Laboratory test showed a BSE of 71 mm/h, white cell count of $7.0 \times 10^9/L$, and CRP of 12 mg/L.

Differential diagnosis consisted of erosion of the gastric band and symptomatic cicatricial hernia. Gastroscopy showed no abnormalities. On the CT scan, we found an aberrant positioning of the intraabdominal gastric tubing. The tubing entered the upper pole of the left kidney and the tip ended at the kidney's hilus (Figs. 1 and 2). Urine sediment showed no signs of an infection.

Patient was operated on by laparoscopy of the gastric band and tubing was removed.

Postoperative patient suffered from pneumonia with pleural effusion, which was drained and antibioticly treated. On CT scan, there were no intraabdominal abnormalities, especially no urinoma.

After recovery, the patient was dismissed from the hospital, and further follow-up showed no residual signs of pain or pyrosis.

Discussion

Since the introduction of the adjustable gastric banding by Kuzmak in 1983, this treatment has gained immense popularity in the battle against morbid obesity [1, 2]. Morbid obese patients have an estimated six- to 12-fold increase in mortality, and medical treatment is often not successful [3]. Due to their weight and associated comorbidity, these patients also have an increase in peri- and postoperative complications. LAGB is considered to be a minimally invasive operative procedure with good results:

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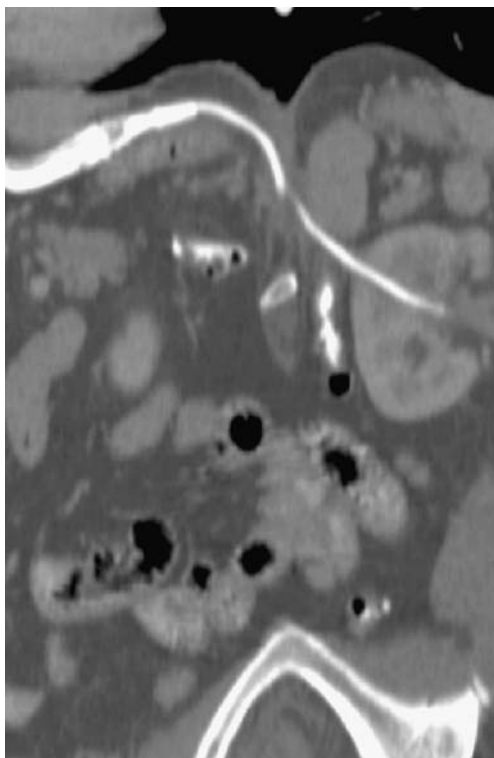


Fig. 1 Reconstruction image of the abdominal CT scan showing intrarenal penetration of the connection tube. The gastric band is seen. Penetration is shown in two directions ending in the hilus of the left kidney

A long-term loss of excess weight of more than 50% is commonly reported, equal to a decrease in BMI with eight to 12 points [4–9]. In contrast with operations based on malabsorption, the LAGB respects the normal human anatomy and is theoretically reversible [3, 9].

Overall, reported complication rates of LAGB ranges from 9% to 31% and depend on the time of follow-up [3, 6, 9]. Among the early complications, wound infection is most commonly seen. Wound infection and port site infection can be an early as well as a late complication. Gastric perforation is seen in 0–3% and always necessitates reoperation [4, 7, 9]. Pulmonary problems (pleural effusion, pneumonia, lung embolism) are also frequently seen.

Late complications mainly originate from either the gastric band or the injection port.

At the site of the gastric band, pouch dilatation is the commonest problem. The incidence of pouch dilatation is 5% to 17% according to the time of follow-up [4–7, 9, 10]. Slippage of the band is another late complication, which is partly related to the operation technique. Formerly, the band was positioned transbursally, whereby the lesser sac was penetrated during band implantation. This procedure was abandoned because of the high rate of slippage. The operation technique changed to a suprabursal band position (the pars flaccida technique), resulting in a significant

reduction of the incidence of slippage. Still, percentages of 0.6–5% are reported [5, 10–13]. Migration of the band through the gastric wall has been described in approximately 1% (range 0.5–3.8%) [4–8, 14, 15]. A multitude of case reports exist on this item, varying from a visible gastric band at endoscopy till total band migration and obstruction of the small bowel [16, 17]. Treatment by removal of the band is mandatory and can be done by laparoscopy or endoscopy [8, 14, 18].

At the site of the injection port leakage, dislocation and infection contribute for the most of the late complications. They all necessitate reoperation. Especially, port site infection can be harsh and end up in surgical removal of the port, leaving the band and tubing intraabdominally.

Rarely, a complication is described originating from the tube connecting the port with the band. To our knowledge, only a few case reports on this subject exist. Daetweiler described a patient who suffered from strangulation of the tubing around the mesenteric root [19]. Zappa described the same complication where the tubing was wrapped around a jejunal loop leading to intermittent obstruction [20]. There are two reports about an intracolonic migration of the tubing [21, 22]. Migration was inflicted by previous treatment of a port infection, as was the case with our patient. The silastic tubing is considered to be inert. Cutting the tubing and leaving it together with the deflated gastric band in the abdomen is an accepted temporary solution for persisting port site infections [9]. A tissue reaction on the tube or band material is not expected, as shown by Lattuada in a histological study [15]. Possibly, a bacterial colonization of the tube could be the eliciting factor of tube migration, though there is no proof of this.



Fig. 2 Reconstruction image of the abdominal CT scan showing intrarenal penetration of the connection tube. A large portion of the tube is seen. Penetration is shown in two directions ending in the hilus of the left kidney

This is the first report of a tube migration in the hilus of the kidney, which was successfully treated by laparoscopic removal. Although migration of the tube is rare and migration of the band is more likely to occur, one should consider the possibility of either of these when a patient develops gastrointestinal pain some time after placement of a gastric band.

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