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Jejunojejunal intussusception following jejunostomy closure: A case report

Tayeb Sabir Kareem [a], Mahmoud Ali Abdi [b,*]

[a] Department of Surgery, College of Medicine, Hawler Medical University, Erbil, Kurdistan Region, Iraq
[b] College of Medicine, University of Zakho, Zakho, Kurdistan Region, Iraq

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ABSTRACT

BACKGROUND: Intussusception can occur anywhere in the small and large bowel, ileocolic intussusception is the most common type in adult and there are few reported cases of jejunojejunal intussusception. Here we report a case of jejunojejunal intussusception due to an iatrogenic lead point at the feeding jejunostomy closure site.

CASE PRESENTATION: In 2019 we received a 63-year-old female complaining of abdominal pain, constipation, and repeated vomiting for five days. On physical examination, she was dehydrated, in pain, and had a nasogastric tube that was draining bilious fluid. The abdomen was tender, there was a long midline incision with tension sutures at the lower of incision. CT of the abdomen showed ileoileal intussusception. Proper resuscitation and preoperative preparation were done. During exploratory laparotomy, there was jejunojejunal intussusception. The intussusception was reduced gently and completely. Resection of the lead point segment done with end to end anastomosis. The patient recovered uneventfully and discharged home on the 5th postoperative day. The patient followed up after one and three months with no complications.

CONCLUSION: During the closure of the feeding jejunostomy site by hand-sewn technique, over invagination of the second (seromuscular) layer of the wall of the jejunum might become so thick at the site of the closure that it acts as a lead point for intussusception. We reported a case of such a scenario.

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1. Introduction

Intussusception in adult is frequently due to a lead point which can be pathological or iatrogenic. Although the most common lead points are benign conditions like adhesion, adenoma, lipoma and crohn's disease however; the malignant lead point lesions are not uncommon such as adenocarcinoma, gastrointestinal stromal tumor, lymphoma, and carcinoid tumor [1,2].

Intussusception can occur anywhere in the small and large bowel, ileocolic intussusception is the most common type in adult, and there are few reported cases of jejunojejunal intussusception [1,2].

The work on this case report has been reported in the line with the SCARE criteria [3]

Here we report a case of jejunojejunal intussusception due to an iatrogenic lead point at the feeding jejunostomy closure site.

2. Case presentation

2.1. Patient information

We received a 63-year-old female in the outpatient clinic complaining of abdominal pain, constipation, and repeated vomiting for five days. She had been treated for peptic ulcer before five years with proton pump inhibitors and Helicobacter eradication but with an only marginal response. Therefore, she continued complaining from peptic ulcer and took more than one course of Helicobacter eradication with a proton pump inhibitor on need. Her past surgical history includes two operations recently. The first operation was before 40 days from the day of the presentation when she presented with severe upper abdominal pain, repeated vomiting, and indigestion in an emergency hospital in the rural city. The surgeon on call diagnosed her at that time as a case of gastric outlet obstruction. She did not respond to conservative treatment therefore he decided to do surgery. Intraoperatively the surgeon found a hugely distended stomach and gastric outlet obstruction. He only did jejunostomy for feeding because the gastric outlet was obstructed. He also took a biopsy from her stomach without any surgical resection for a gastric outlet during this operation, as noted in the patient's medical report written by the operating surgeon.

* Corresponding author at: Zakho International Road, University of Zakho, Zakho, Kurdistan Region, 42002, P.O.Box 12, Iraq.
E-mail address: mahmoud.abdi@uoz.edu.krd (M.A. Abdi).

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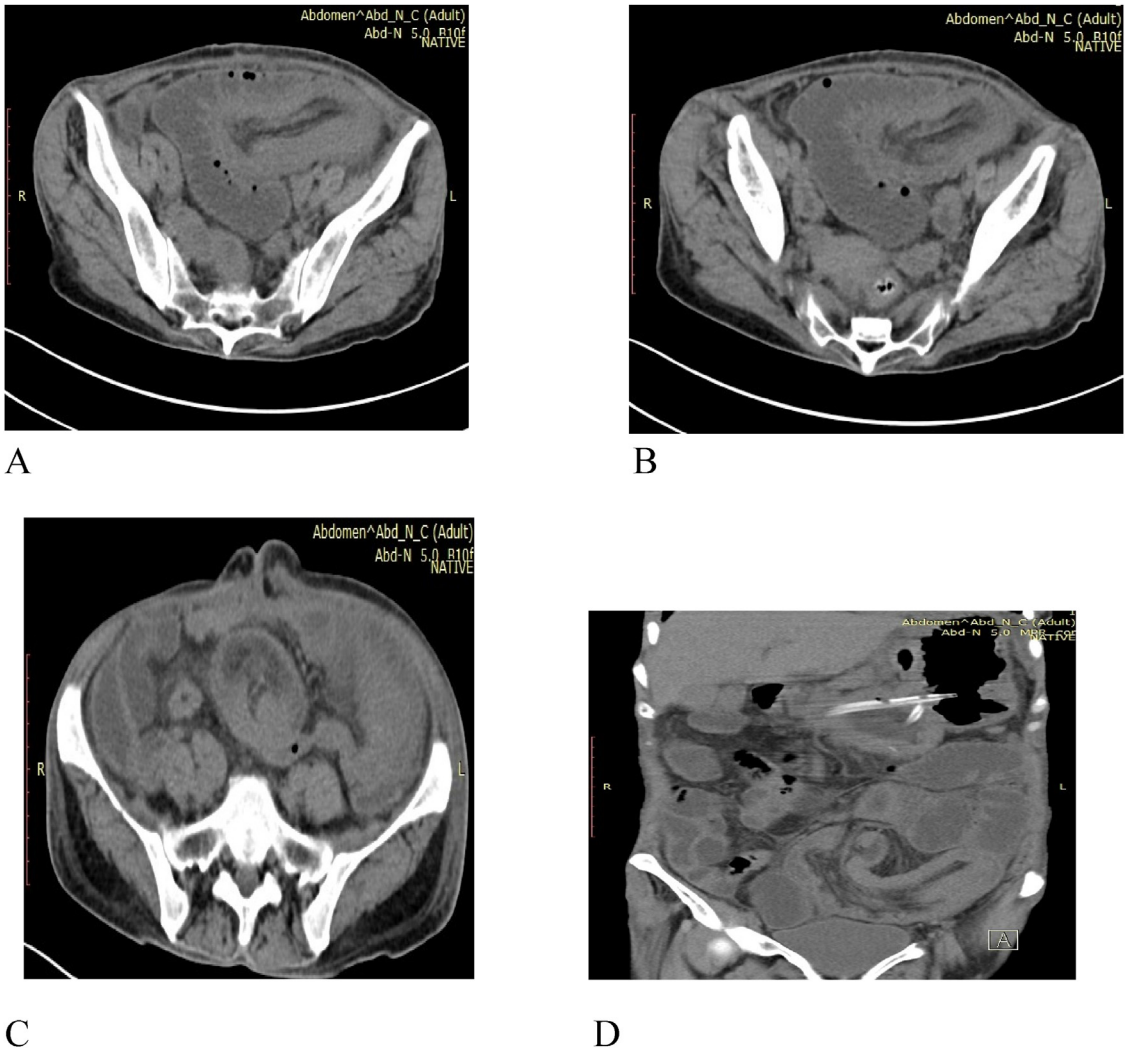

Fig. 1. (A, B, C, D) CT scan of the abdomen showing the intussusception in small bowel with target sign, there is nasogastric tube inside stomach (D).

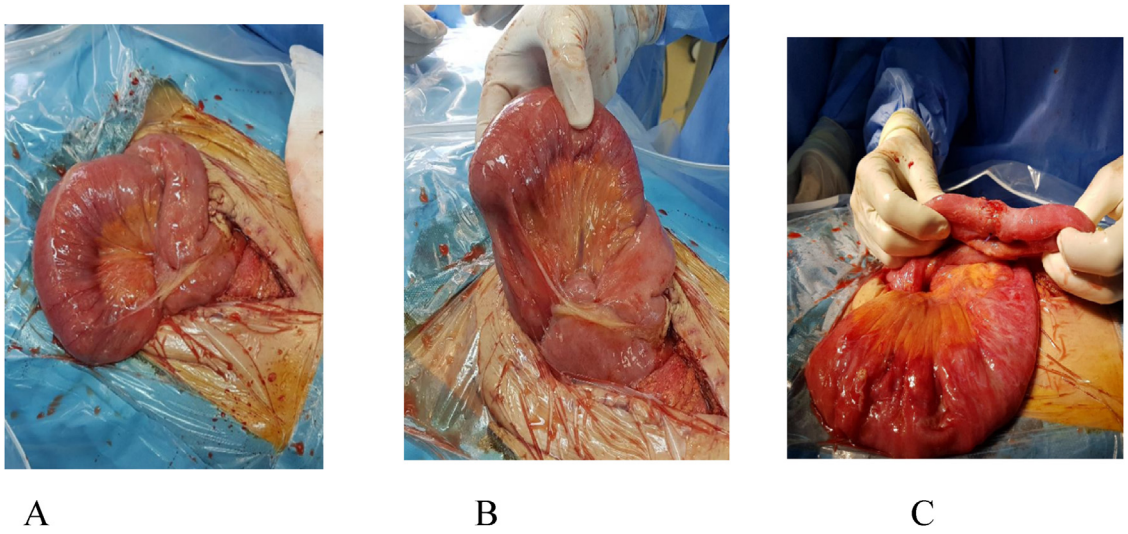

Fig. 2. (A, B) Intraoperative image showing jejunojejunal intussusception. (C) lead point at the site of jejunostomy closure.

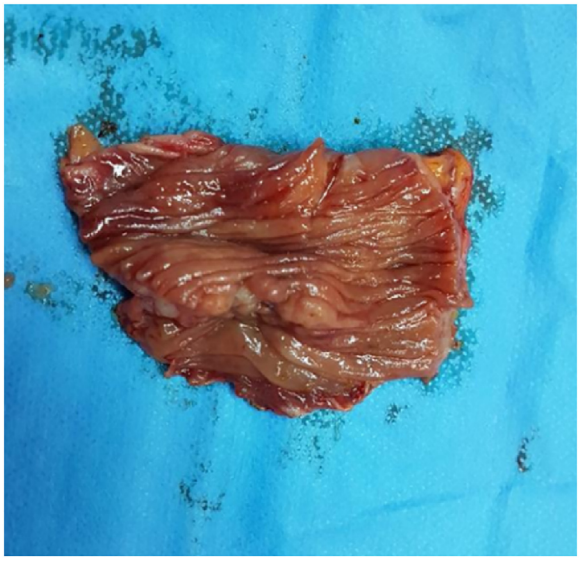

Fig. 3. Wedge resection of the lead point site as a segment.

The patient's family fed her through a jejunostomy feeding tube for three weeks so she could gain a little weight. During this period the biopsy result came with benign inflammatory changes. After these three weeks, during which the patient gained some weight, the second operation was done by the same surgeon. He performed a loop gastrojejunostomy and jejunojejunostomy as a surgical approach to gastric outlet obstruction. He didn't perform antrectomy and he closed the site of feeding jejunostomy by hand-sewn technique, in which he removed the feeding tube, refreshed the edges of the jejunostomy wound, and sutured manually through double layers suture technique.

2.2. Clinical findings

On physical examination the patient was dehydrated, vital signs were stable, she was in pain, and had a nasogastric tube that was draining bilious fluid. The abdomen was tender but not distended she had a long midline incision with tension sutures.

2.3. Diagnostic imaging

CT scan of the abdomen showed ileoileal intussusception, patent gastrojejunostomy and jejunojejunostomy and no signs of leak or obstruction (Fig. 1).

2.4. Surgical intervention

Exploratory laparotomy was done after proper resuscitation and preoperative preparation. During laparotomy there was a jejunojejunal intussusception at the site of previous jejunostomy closure (Fig. 2). The intussusception was reduced gently and completely. The lead point was found to be previous jejunostomy closure site, the invagination of the second layer of the closure site made the wall so thick to act as a mass and cause the intussusception. Resection of the lead point segment was done (Fig. 3) with end to end anastomosis of the jejunum.

2.5. Follow up and outcome

The patient recovered uneventfully and she was discharged home on 5th postoperative day, with follow up after one and three months with no complications.

3. Discussion

Intestinal Intussusception is rare in adult, and adult intestinal Intussusception occurs most frequently in the small bowel. Although the adult Intussusception is usually due to the presence of lead point however, the adult Intussusception without lead point can occur frequently than previously reported [4].

The adult Intussusception without lead point usually manifests as vague abdominal pain without features of proximal intestinal obstruction. it's usually transient and discovered incidentally at CT performed for other reasons [5].

The Intussusception with lead point may manifest with atypical clinical findings, often there are symptoms of partial intestinal obstruction or symptoms related to the lead point [6].

In this case, we suspected an internal herniation of the small bowel as a postoperative complication of gastrojejunostomy however there were no important CT scan findings to support that, such as swirled mesentery, mushroom sign, hurricane eye, clustered loops, small bowel behind superior mesenteric artery, and right-sided anastomosis [7].

Besides, the CT scan findings supported the intussusception of the small bowel (Fig. 1). They consisted of a complex soft tissue mass, a sausage-shaped mass, and a target mass or sign, all of which are diagnostic for intussusception of the bowel [4,8]. The CT scan findings supported Intussusception of small bowel which was consisting of a complex soft tissue mass, a sausage-shaped mass, and target mass or sign and all of these findings are diagnostic for Intussusception of bowel [4,8].

Few cases of Jejunojenunal intussusception secondary to jejunostomy feeding tube has been reported. Carucci et al. reported a series of four cases of Jejunojenunal intussusception following jejunostomy feeding tube, the diagnosis of small bowel intussusception was confirmed by radiological findings while the feeding tube was still in situ, the patients had no clear clinical findings and all cases was treated conservatively without need for surgery [9].

In contrast to Carucci et al, Wu TH et al. reported a case of Jejunojenunal intussusception following jejunostomy feeding tube with clinical findings of small bowel obstruction that did not responded to conservative management and surgical reduction of Jejunojenunal intussusception was mandatory [10].

Although the etiology and mechanism behind Jejunojenunal intussusception of the case of Wu TH et al. remained unclear [10], however; we believe that the etiology of the present case was inappropriate technique of jejunostomy closure, in the form of over invagination of the second (seromuscular) layer of the closure site that made the wall so thick to act as a mass and cause the intussusception.

4. Conclusion

During the closure of the feeding jejunostomy site by hand-sewn technique, over invagination of the second (seromuscular) layer of the wall of the jejunum might become so thick at the site of the closure that it acts as a lead point for intussusception. We reported a case of such a scenario.

Declaration of Competing Interest

The authors report no declarations of interest.

Sources of funding

No funding received form any sources.

Ethical approval

This case report is exempted from ethnical approval in our institution.

Consent

The fully informed written and signed consent has been obtained from Son of the patient which is documented in the paper.

Patient identity and related personal information will not be disclosed in this article.

Author contribution

1. Dr. Tayeb performed the surgery for the patient, data analysis and interpretation.
2. Dr. Mahmoud was assistant in surgery, data collected, wrote the paper and took the consent form patient.

Registration of research studies

1. Name of the registry: this case report has not been register yet.

Guarantor

Dr. Mahmoud is the Guarantor.

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