A Remarkable Journey Through Time: Reversal of Jejunoileal Bypass 43 Years Later - A Comprehensive Case Report and Clinical Insights

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Introduction

The history of surgical interventions for weight loss witnessed a significant shift with the introduction and eventual decline of jejunoileal bypass in the 1960s and 1970s. Initially praised for its effectiveness, this procedure later revealed serious complications, leading to a focus on early detection and reversal. Among instances of reversal, we present a remarkable case of jejunoileal bypass reversal conducted 43 years post-initial procedure. This case not only illuminates the intricacies of the reversal process but also emphasizes the unique anatomical challenges involved.

Jejunoileal bypass reversal has become pivotal in managing the long-term consequences of this surgical approach, including malabsorption, nephrolithiasis, and cirrhosis. Literature also suggests that late jejunoileal bypass diarrhea may stem from bacterial byproducts originating in the excluded bowel, potentially manageable with metronidazole or bypass takedown (Drenick et al., 1976). Despite ample literature on the topic, comprehensive case studies detailing procedural intricacies and post-reversal bowel appearance remain scarce. This report aims to fill this gap by presenting the case of BS, a 69-year-old female experiencing chronic diarrhea after jejunoileal bypass performed four decades ago for a BMI of 45.

Case Report

BS presented in 2020 to an outside institution with a BMI of 25 and a history of "small bowel bypass" causing severe malabsorption. An exploratory laparotomy revealed a Payne and DeWind style jejunoileal bypass (Buchwald & Buchwald, 2002) with a 20 cm proximal jejunum and 20 cm terminal ileum anastomosis (Figure 1). Subsequently, a side-to-side enteroenteric anastomosis was performed to allow chyme to enter the atrophic small bowel and induce hypertrophy of the atrophic small bowel. The location of the enteroenteric anastomosis was placed at allowed allocation that the atretic small bowel with shorten mesentery could reach the anastomosis.

However, BS presented to our surgical service 3.5 years later with persistent short gut syndrome, characterized by uncontrollable diarrhea and severe malabsorption. Suspecting the defunctional loop had not become functional due to the larger bypass anastomosis, we opted for jejunoileal bypass reversal. This procedure revealed the extent of bowel atresia (Figure 3), and involved stapling the small bowel above the jejunoileal bypass anastomosis between the proximal lumen of the jejunum and the terminal ileum using a TA stapler, rerouting all afferent flow through the previously defunctionalized small bowel via the enteroenteric anastomosis from 2020 (Figure 3).

During surgery, an intraoperative EGD confirmed the absence of obstruction or bleeding in the atretic limb, and intraoperative Doppler was used to ensure intact blood supply to the bowel segment above the jejunoileal anastomosis. Postoperatively, the patient remained NPO with NGT decompression and underwent weekly SBFTs (small bowel follow-through studies) to monitor small bowel progression and dilation. She remained clinically obstructed with high NG output.

Results

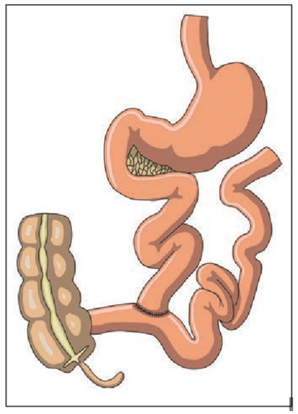


Figure 1. Depiction of Payne and DeWind style jejunoileal bypass (Drawing by Robinson TJ)

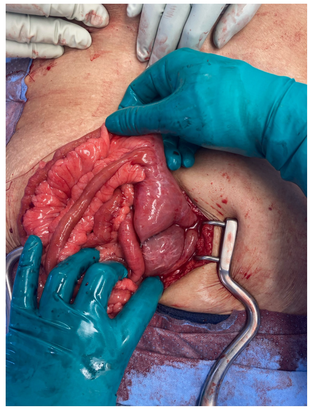


Figure 2. Shows atretic small bowel at reversal procedure

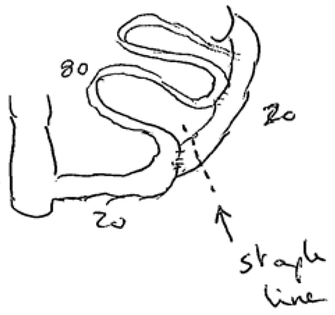


Figure 3. Schematic showing the previous enteroenterostomy in 2020 in relation to the remainder of the small bowel and the length in cm or small bowel limbs

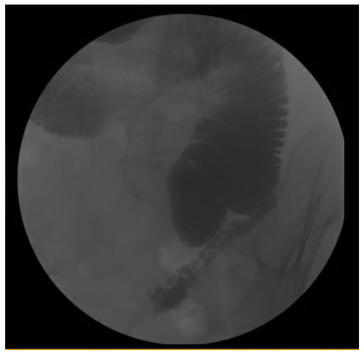


Figure 4. UGI showing contrast flow into atretic small bowel.

Case Report continued

After a seven-week hospital stay, during which her SBFT showed progressive dilation of the atretic small bowel with slow contrast progression, BS opted for a decompressive PEG (percutaneous endoscopic gastrostomy) for continued high NG output. At the same time an attempted jejunal feeding tube placement was unsuccessful. A follow-up SBFT at 8 weeks post-op revealed partial breakdown of the TA staple line along with functional improvement of the previously atretic small bowel segment (Figure 4). Following the reversal, BS has experienced significant improvement. Her decompressive PEG has been removed, and her daily bowel movements decreased from 10-15 to 3-4, averting the need for a colostomy.

Discussion

It is well-established that direct interaction with luminal chyme is crucial for sustaining mucosal integrity (Kovalenko & Basson, 2012). Additionally, intraluminal chyme influences gut motility, potentially reducing hospital length of stay and possibly preventing staple line breakdown (Johnson et al., 1997). In hindsight, it is believed that BS could have benefited from prehabilitation with the placement of a jejunostomy tube for trickle tube feeds through her defunctionalized segment prior to reversal.

Recommendations

Reflecting on this case and the literature, a two-staged approach, as described by Ardila-Gatas et al., where the first procedure delineates the anatomy and allows for feeding access through the defunctionalized segment, followed by bypass reversal at a later date, could potentially enhance outcomes in similar cases.

References

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