A Case of Simultaneous Abdominal Wall Reconstruction and Creation of Diverting Ostomy in a Ventral Hernia with Loss of Domain

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Introduction

Ventral hernias have become an increasingly common complication of abdominal surgery ranging from 2% to 20% with a wide range of variations. These hernias can be asymptomatic, but can also cause severe complications, such as necrosis of the small bowel. Separately, sacral ulcers are another common complication seen in hospitals. These wounds are seen with immobile or poorly perfusing patients that can become infected and progress to cellulitis, abscess formation, and even osteomyelitis. In some cases, severe infections or non-healing wounds can be better managed after the diversion of fecal material away from the area. The patient in this report was suffering from a chronic stage IV sacral decubitus ulcer which was worsening despite wound care. She was also found to have a large incarcerated ventral hernia defect. Given this finding, we approached this patient with the interest of treating the ventral hernial defect, but also using the defect to create a diverting transverse loop colostomy.

Case Report

A 67-year-old female was admitted for medical management of leukocytosis. General surgery was subsequently consulted for the evaluation of a sacral decubitus ulcer. On physical exam, the patient is bed-bound, and an abdominal exam was significant for a large chronically incarcerated midline ventral hernia superior to the umbilicus. The sacral decubitus pressure injury was unstageable, measuring 2 x 2cm with foul-smelling, purulent material, induration, and erythema extending 4 – 6 cm beyond the borders of the ulcer. The patient underwent a sharp excisional debridement of the infected ulcer, with the total area of debridement measuring 16 x 11.5 x 4.5 cm. The remaining tissue was noted to be immediately adjacent to the rectum. On rectal exam, there appeared to be communication between the ulcer and the rectum. A fecal management system (FMS) was subsequently placed to divert stool from the area temporarily and allow for wound healing.

Case Report Cont.

The FMS was noted to have feculent material leaking around the system, and medical management to maintain loose stools was ineffective. A diverting colostomy was planned. A computerized tomography (CT) scan of the abdomen and pelvis was performed to evaluate the ventral hernia location and plan for colostomy placement (Figure 1). The patient subsequently underwent an exploratory laparotomy with a diverting ostomy, primary closure of the ventral hernia, and skin flap creation.

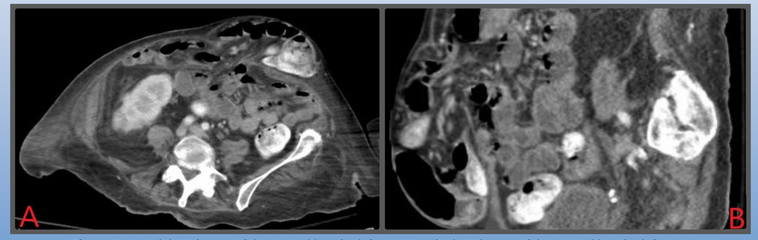


Figure 1. A. Axial CT image of the ventral hernia defect. B. Sagittal CT image of the ventral hernia defect.

In the OR, a midline incision was made, and the hernia sac was isolated then entered. Portions of the small bowel and colon appeared to be incarcerated and adhesions taken down. The ostomy site was determined to be passed through the ventral defect at the midline, rather than laterally in the rectus. The remainder of the hernia defect was closed primarily with 0 Ethilon suture. A skin flap was excised from the remaining skin in the ventral hernia repair, and the skin closed using staples.

Case Report Cont.

A circular incision was made at the predetermined location, and the transverse colon was elevated to the skin surface. Stay sutures were placed along the fascial junction and the ostomy was brooked with 3-0 silk and chromic sutures. Postoperatively the loop colostomy was functioning well.

Discussion

In this case, we presented a patient with a stage 4 sacral pressure ulcer managed with a diverting loop ostomy and ventral hernia repair in one operation. The transverse loop colostomy was created through the ventral hernial defect. Benefits of the transverse loop colostomy in terms of diverting stool away from the sacral ulcer are as follows: decrease in wound contamination/infection, allow health providers to adequately clean the wound site, as well as allow for decreased amounts of ostomy output. In this case, the patient was already bed-bound with a non-healing ulcer and so, quality of life would not be significantly decreased by the creation of an ostomy. Little to no research has been published that addressed both a ventral hernia repair and a diverting ostomy for the promotion of concurrent sacral ulcer healing. Although these conditions can be managed separately, many patients have multiple comorbidities and often require surgery. Dual surgeries, such as this one, can potentially cut down on hospital cost and post-operative complications. Further research and long-term follow-up would be the next step in establishing whether this combination is indeed a viable option, or if separate management of these conditions would be more in the patients' best interest.

Conclusion

This case presents a novel and viable method for the creation of an ostomy in patients with large ventral hernias. Further study regarding long-term outcomes may be beneficial in establishing utility.