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Mechanical small bowel obstruction a rare complication after aortic valve surgery: Case report

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Abstract

Gastrointestinal (GI) complications after cardiac operations are of rare occurrence, but it has a high mortality rate. Mechanical bowel obstruction is even much rarer to occur. Here we are reporting a case of middle-aged male who developed a mechanical bowel obstruction soon after an aortic valve replacement surgery and was timely and successfully diagnosed and managed.

Keywords: Bowel obstruction; mechanical bowel obstruction; cardiac surgery; aortic valve replacement; cardiac surgery complication

Introduction

Gastrointestinal (GI) complications after cardiac surgery are uncommon, with a reported incidence that ranges from 0.3 to 5.5% in some reports^[1-3]. Despite its low incidence rate, the morbidity and mortality of such complications are devastating even when diagnosed and treated early, with an overall mortality rate that is reported to be between 61% in some studies and 87% in others^[1,4].

The most common GI complications include GI bleeding, mesenteric ischemia (MI), peptic ulcers, pancreatitis, and paralytic ileus^[1-6].

Mechanical bowel obstruction is an extremely rare complication of cardiac operations: we could find no such cases reported within the English literature.

Here we are reporting a case of mechanical bowel obstruction that developed after aortic valve surgery in a middle-aged male patient.

Case report

The patient was a 34-year-old male, who was known to have a bicuspid aortic valve with aortic valve stenosis and had been in regular follow-up with us for three months. His recent echocardiogram showed a progression of his aortic valve stenosis, with an aortic valve area of 0.8 mm, a maximum gradient of 50 mmHg, and ejection fraction of 40 percent. Pre-operative angiography showed normal coronaries. The decision was made to carry out valve replacement surgery. All pre-operative laboratory investigations and chest x-rays were within normal limits. The patient successfully underwent a smooth aortic valve replacement surgery with a mechanical prosthesis (25 mm Carbomedics Supra-Annular). The total bypass time was 120 Min, and the cross-clamp time was 90 Min.

Post-operatively, on day two, the patient started complaining of abdominal pain and abdominal distension, with no passage of either stool or flatus. On examination, the patient was haemodynamically stable, with moderate abdominal distension and mild tenderness over the flanks. Laboratory results were all within the acceptable limits, including CBC, electrolytes, and lactate. General surgery specialty was consulted, and they advised conducting erect and supine abdominal x-rays (Figure 1), a fleet enema, and computed tomography (CT) scan with intravenous contrast of the abdomen to rule out bowel ischemia.

The report of the CT showed no evidence of bowel ischemia, but there was a high-grade small bowel obstruction with a transitional zone at the distal ileum measuring about 3cm in length, and proximal bowel dilatation of up to 3.6cm (Figure 2).

The general surgeon preferred to continue with conservative management unless the patient's condition necessitated intervention.

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After 24 hours, the patient did pass stool once and started to experience a degree of improvement.

Unfortunately, this improvement was not sustained for long before his condition worsened again, with a recurrence of abdominal pain and distension. The patient's abdomen was tender and tympanic on examination. Vitals were normal apart from some tachycardia. The laboratory results were normal, and the lactate was not rising.

General surgeon was called urgently to evaluate the patient, and they decided to undertake an emergency exploratory laparotomy.

During the laparotomy procedure, a full inspection from the duodenojejunal (DJ) junction to the cecum was conducted and revealed a small twisted area just before the ileocecal valve. Gentle manipulation was enough to untwist and deflate the bowel. There was no ischemia at any part, and only a small tear a few centimetres before the ileocecal valve, which was surgically repaired. The abdomen was closed, and the patient was returned to the cardiac surgery intensive care unit (CSICU). He had an excellent recovery thereafter and was discharged home eight days after the laparotomy in good health.



Fig 1: Supine abdominal X-ray with a characteristic picture of an obstructed and dilated small bowel.



Fig 2: A transverse section of an abdominal computed tomography (CT) scan with IV contrast showing a diffusely dilated small bowel with a transitional zone (arrows) at the distal ileum.

Conclusion

Gastrointestinal complications after cardiac surgery can be fatal and are difficult to diagnose early because of the patient's condition postoperatively, which obscures the signs and symptoms of a GI complaint. Careful daily evaluation and assessment of the patient postoperatively is essential. Although mechanical bowel obstruction after cardiac surgery is uncommon, it still needs to be considered if patients have GI complaints postoperatively.

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