

Case aortic valve, which is prone to calcification.

[Business](#), [Management](#)



Case Report Epidemiology of Aortic Stenosis Moderate or severe valvular cardiac disease are common conditions, become more prevalent with age, and adversely affect overall survival in the general population. 1 Of the valvular heart diseases, aortic stenosis is the most common cause of valvular heart disease in the United States. 2 It is more common in the older population and the prevalence rises as people age. Among people 50-59 years old and 60-69 years old, the prevalence of aortic stenosis is 0.2% and 1.

3%, respectively. For older patients the prevalence increases even further with 3.9% in patients 70-79 and 8.9% in patients 80-89 years old. Most of these patients with aortic stenosis have either calcific disease of the typical, trileaflet aortic valve or were born with bicuspid aortic valve, which is prone to calcification. 3, 4 This is in contrast to people in developing countries, where aortic stenosis is more often a result of rheumatic valve disease 2, 5. Overall, aortic stenosis affects about 3% of people that are 75 years old or older in the United States. 6 The Case Our patient is a 67 year male with a history of severe intellectual disability, non-verbal and non-ambulatory at baseline, bed bound with kyphoscoliosis and severely contracted upper and lower extremities.

He presented to the emergency department with a 3-day history of nausea, vomiting, abdominal discomfort and diarrhea. A CT abdomen was obtained in the emergency department which showed a cecal volvulus with a massively distended cecum measuring 8.5 cm in luminal width, for which the patient was scheduled for emergency surgery. On arrival to the preoperative area, the patient was noted to be thin-appearing, and lying in bed with

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severely contracted extremities. Airway evaluation was limited by the patient's non-interactive and uncooperative nature. The cardiac exam revealed a prominent grade IV/VI systolic ejection murmur across the precordium. The anesthesiology team ordered a STAT bedside transthoracic echo (TTE) as further assessment of the patient's cardiac function was crucial in developing the anesthetic plan prior to proceeding to surgery. The bedside ECHO was also important in guiding intraoperative anesthetic management of the patient.

The anesthesiology team and TTE technician reviewed the TTE at bedside and found that the patient had moderate aortic stenosis based on a peak gradient of 71*. Therefore, the team proceeded to surgery with the understanding that the patient had moderate aortic stenosis. Of note, a later interpretation (after the patient's operation) of the TTE by the cardiology team revealed that the patient had low-gradient severe aortic stenosis with preserved ejection fraction (EF of 70%) instead of moderate aortic stenosis. Since the Cardiology interpretation of the TTE was obtained at a later time, the team proceeded to surgery with the thought that the patient had moderate aortic stenosis. When the patient arrived to the operating room, he was induced via rapid sequence induction using rocuronium, etomidate, propofol and fentanyl. Rocuronium was used instead of succinylcholine because of concern for hyperkalemia in this bed-bound patient. A total of 50 mg of rocuronium was administered for induction as well as 10 mg of etomidate, 10 mg of propofol and 50 mg of fentanyl.

On induction, 150 mcg of phenylephrine was also administered to maintain afterload and systemic perfusion in the setting of moderate aortic stenosis with use of vasodilatory IV anesthetic agents. The patient was then intubated with a glidescope given the limited airway exam. An arterial line was then placed to continuously monitor blood pressure in order to guide management in maintaining afterload. Overall, the entire procedure, an exploratory laparotomy with right hemicolectomy for cecal volvulus, lasted for about 2 hours. For the first hour of the procedure, the patient's blood pressure was labile, ranging from 215/100 to 90/75 with mean arterial pressures of 99 to 148 as measured by the arterial line. Phenylephrine was administered during the procedure to maintain afterload when the patient's blood pressure decreased. By the second hour, his blood pressure and mean arterial pressures had stabilized, ranging from 180/80 to 140/70 and 100 to 150, respectively.

Throughout the procedure, the patient's heart rate ranged from 55-90 and oxygen saturation was maintained at 100%. After surgery, the patient remained intubated and was brought to the post anesthesia care unit where he stayed for 3 hours; after which he was transferred to the intensive care unit where he was extubated on post-operative day 1. His post-operative course was complicated by acute gastrointestinal bleed on post-operative day 1.

A few hours after extubation, the patient had 2 episodes of hematochezia as well as coffee-ground emesis in his nasogastric tube. Additionally, hematocrit decreased from 32.7 to 21.9, and the patient was noted to have

symptomatic anemia with tachycardia and hypotension. He was transfused with 4 units of packed red blood cells and brought back to the operating room on post-operative day 1 for emergent re-exploration and revision of the ileocolic anastomosis. After the revision, he was brought back to ICU and extubated 2 days later. After extubation, he was transferred from the ICU to the step-down unit, where he had a few episodes of melanic stools that self-resolved.

After 6 days in the step-down unit, he was then transferred to a regular medicine floor where he remained until discharge home.