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ACUTE IDIOPATHIC GASTRIC DISTENSION CAUSING ATRIOVENTRICULAR BLOCK AND CARDIOGENIC SHOCK

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Abstract—Background: We report a rare case of acute idiopathic gastric dilatation with associated severe bradycardia and shock. **Case Report:** A 69-year-old woman presented to the emergency department (ED) with complaint of chest pain and dyspnea. The patient required transvenous cardiac pacing for profound bradycardia and cardiogenic shock. After a negative emergent cardiac catheterization, a flat plate abdominal x-ray study demonstrated massive gastric dilatation, prompting nasogastric tube placement, with subsequent rapid improvement of the patient's cardiovascular and metabolic instability. **Why Should an Emergency Physician Be Aware of This?:** This case highlights the rare though potentially catastrophic complications of acute gastric dilatation, and benefits of early intervention with gastric decompression. © 2017 Elsevier Inc. All rights reserved.

Keywords—cardiogenic shock; third degree heart block; acute gastric distension; abdominal compartment syndrome; transvenous pacing; nasogastric decompression

INTRODUCTION

Acute gastric dilatation is a potentially life-threatening condition that an emergency physician must consider when evaluating a patient in shock.

Case Report

A 69-year-old woman was brought to the Emergency Department (ED) by ambulance with a 2-h history of chest pain, dizziness, and dyspnea after participating in a line-dancing activity. The Emergency Medical Services (EMS) report consisted of the patient appearing cool, pale, and diaphoretic, though maintaining verbal responsiveness. Initial vital signs were significant for a heart rate of 20 beats/min, blood pressure 90/46 mm Hg, with electrocardiogram (ECG) demonstrating wide complexes concerning for ventricular escape rhythm (Figure 1). Two doses of 0.5 mg atropine were administered by EMS, and the first resulted in transient improvement in heart rate and blood pressure. On arrival to the ED, the patient was moaning and in acute distress, complaining of severe substernal chest pressure and dyspnea. The patient's medical history was significant for dyslipidemia and hypertension, for which she was taking lisinopril, Aldactone (Pfizer, New York, NY), and verapamil. On physical examination, vital signs were as follows: blood pressure 76/43 mm Hg; heart rate 70 beats/min; respiratory rate 18 breaths/min; oxygen saturation of 94% on room air; and body temperature 36.6°C (97.9°F). She was alert and responsive to questions but was ill appearing, pale, cool to the touch, and diaphoretic. Auscultation revealed normal heart sounds without murmur or gallop, and clear lung sounds bilaterally. Femoral and radial

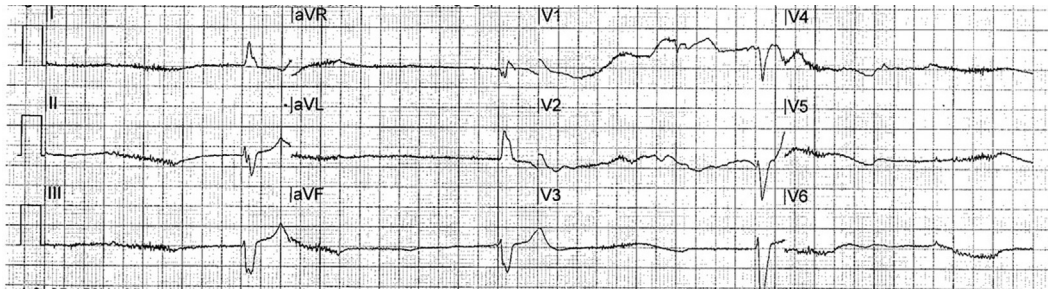


Figure 1. Prehospital electrocardiogram obtained by Emergency Medical Services personnel upon initial patient evaluation.

pulses were palpable. Abdominal examination revealed moderate distension, though without rigidity or tenderness to palpation. Initial laboratory results revealed an acute inflammatory reaction with a leukocytosis of 21.2×10^3 with left shift, metabolic acidosis with CO_2 12 mmol/L, anion gap 17, lactic acid 3.2 mmol/L, potassium 5.7 mmol/L, and acute kidney injury with creatinine 3.1 mg/dL, glomerular filtration rate 15 mL/min, and blood urea nitrogen 48.

Transvenous pacing was initiated after atropine and fluid resuscitation failed to provide significant hemodynamic stability. Repeat ECG demonstrated atrial fibrillation with left bundle branch block morphology, which was presumed new due to no prior ECG for comparison. In the context of the ECG findings, severe chest pain, and hemodynamic instability, emergent Cardiology consultation for cardiac catheterization was obtained, which ultimately demonstrated no coronary artery disease. Unfortunately, repositioning of the transvenous pacemaker with fluoroscopic guidance failed to provide significant hemodynamic improvement, and dopamine was initiated by the consulting cardiologist. Prior to arrival to the intensive care unit, the patient began complaining of epigastric discomfort and nausea, prompting an anterior-posterior view abdominal x-ray study, which demonstrated marked distension of the stomach (Figure 2). A nasogastric tube (NGT) was placed, providing decompression of the stomach, 250 mL liquid aspirate, and resulted in dramatic improvement in the patient's condition. The transvenous pacemaker was discontinued 30 min after NGT placement, and over the following 6 h, dopamine was titrated off and urine production improved significantly.

A postcatheterization chest x-ray study demonstrated bilateral opacities, and given profound leukocytosis and shock, the patient was started on broad-spectrum antibiotics for presumed septic shock, which was not substantiated throughout admission. The patient's lactic acid cleared at the end of hospital day 1, and renal function fully recovered by hospital day 3. A General Surgery consultation prompted upper endoscopy evaluation to investigate potential cause of the acute gastric dilatation

with high suspicion for gastric outlet obstruction. Endoscopy revealed mild chronic gastritis and no evidence of obstruction. The patient fortunately had a full recovery without any long-term sequelae of her shock state.

DISCUSSION

Acute gastric dilatation is a potentially life-threatening condition that an emergency physician must consider when evaluating a patient in shock. This syndrome, though rare, seems to more commonly present in those patients with abnormal eating behaviors associated with psychiatric disease, but is also reported to be associated with the use of noninvasive ventilation, unrecognized



Figure 2. Flat plate abdominal x-ray study demonstrating massive gastric dilatation.

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