Index of Suspicion: Colonic Extravasation of Intravenous Contrast After Cardiac Catheterization

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Case Report

We present a 4 month old black male infant with prenatally diagnosed complex congenital heart disease with single ventricle physiology and normal amniocentesis. He was born prematurely at 35 3/7 weeks with a birth weight of 3.2kg to a 33 YO, G6P4 female via C-section for Breech presentation and non-reassuring fetal heart tracing. Pregnancy was also complicated by non-compliant insulin dependent diabetes mellitus. APGAR scores at birth were 1, 4 and 8 at 1, 5 and 10 minutes respectively, with the patient requiring resuscitation with intubation and mechanical ventilation. He was admitted in the cardiac ICU for further management.

His cardiac diagnosis was right ventricular dominant complete atrioventricular canal defect, in the setting of double outlet right ventricle with severe pulmonary stenosis. His physical exam was positive for stridor secondary to severe laryngomalacia, ankyloglossia, micropenis, anal stenosis with an abnormal anal verge and posteriorly placed anus.

He remained in the cardiac ICU as he was requiring noninvasive positive pressure ventilation for respiratory support after failed weaning. He displayed significant feeding intolerance both when fed orally and by nasogastric tube with intermittent abdominal distention requiring bowel rest. The infant had a rectal suction biopsy that was negative for aganglionosis, excluding Hirschprung’s disease. At 4 weeks of life he had a supraglottoplasty with frenotomy for treatment of his severe laryngomalacia and ankyloglossia.

Figure 1: Chest and Abdomen x-ray showing contrast in the colon and rectum.
He then developed an urinary tract infection (UTI) at 6 weeks with Enterococcus faecalis and Enterobacter cloacae and his hypoxia was worsening with oxygen saturations in the low 70’s. After 10 days of treatment for his UTI and given his worsening hypoxia he underwent cardiac catheterization for the placement of a right ventricular outflow tract (RVOT) stent to relieve the obstruction and to improve pulmonary blood flow as a first step in his staged single ventricle palliation. When he returned from the catheterization lab after successful placement of the RVOT stent his x-ray showed contrast in his colon. He had received intravenous contrast and he had appearance of contrast in the colon as seen in Figure 1.

Given this abnormal x-ray with extravasation of contrast into the colon after intravenous administration during the catheterization procedure a differential diagnosis of cysto-rectal fistula or recto-urethral fistula [1] was entertained. After the contrast cleared from his bowel he underwent a Vesico-Cysto-urethrogram (VCUG) as demonstrated in Figure 2.

Figure 2: The white arrow shows a faint linear tract of contrast between the posterior wall of the bladder and rectum.

Accumulation of contrast in the rectum during a VCUG showed a fistulous tract between the posterior wall of the bladder and the rectum. Congenital rectourethral or anourethral fistulae without imperforate anus in males are rare, representing less than 1% of anorectal malformations [2]. The patient had surgical repair of this fistula that was identified in the anterior distal aspect of the rectum and passing into the prostatic urethra, as well as anoplasty. The urinary tract infections were suspected to be secondary to this anomaly, as well as the finding of contrast in the colon after IV contrast given for the cardiac catheterization. The infant recovered well and had his second stage surgical palliation of his cardiac disease at 4 months with a right cavopulmonary anastomoses and was discharged home after recovery.

References