

A Rare Case: Pylor Stenosis with Anal Atresia and Vesicoureteral Reflux

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Abstract

Background: In newborns, vomiting is a very frequent find. Especially in a newborn who has undergone major surgery, postoperative vomiting is a common occurrence. In our study, we aimed to present a newborn who was operated on first for anorectal malformation (ARM) and then for vesicoureteral reflux (VUR) and diagnosed with infantile hypertrophic pyloric stenosis (IHPS) upon persistent vomiting.

Case Presentation: 2900 gram, 40 weeks, a boy was born from the first birth of the 25-year-old mother. It was observed that the patient had anal atresia in his first examination. He was operated on the postnatal first day and the ostomy opened. Then the patient who had urinary tract infections was performed USG and voiding cystourethrogram. The patient was diagnosed with VUR and a subureteric injection (SUE) was made. Upon persistent vomiting, he was diagnosed with IHPS.

Conclusions: The existence of additional anomalies in babies born with congenital anomalies must be investigated. If vomiting persists, especially in a neonatal who has undergone major thoracoabdominal surgery IHPS should not be forgotten. There is no specific treatment order for patients who have multiple anomalies and require more than one surgery to be corrected. Each patient should be specially examined.

Keywords: Pylor Stenosis; Anal Atresia; Vomiting; Vesicoureteral Reflux

List of Abbreviations: ARM: Anorectal Malformation; VUR: Vesicoureteral Reflux; IHPS: Infantile Hypertrophic Pyloric Stenosis; SUE: Subureteric Injection; USG: Ultrasonography; GER: Gastroesophageal Reflux; AP: Anteroposterior; ASD: Atrial Septal Defect; TEF+EA: Tracheoesophageal Fistula and Esophageal Atresia

Background

In newborns and infants; vomiting, which increases especially when they lie in the supine position and occurs after feeding, is usually due to physiological gastroesophageal reflux (GER). Pathologies such as urinary tract infections are also common causes of vomiting in newborns. Especially in a newborn who has undergone major surgery, postoperative vomiting is a common occurrence. IHPS is the most common cause of gastric outlet obstruction in newborns. The classic presentation of IHPS is nonbilious, projectile vomiting in healthy babies who is between 2 and 8 weeks old [1]. If not aware on time and is not treated, it causes serious nutritional disorders, dehydration, and acid-base immobility [2].

In our study, we aimed to present a newborn who was operated on first for arm and then for VUR and diagnosed with IHPS upon persistent vomiting.

Case Presentation

2900 gram, 40 weeks, a boy was born from the first birth of the 25-year-old mother. It was observed that the patient had anal atresia in his first examination. Invertogram was withdrawn (Figures 1 and 2). It was observed that it was compatible with the high type arm. Additional anomalies are investigated. Echocardiography was done and small secundum ASD was seen. Pathology was not seen in abdominal USG. With these findings, the patient was operated on the postnatal first day and the transverse loop ostomy opened. Antireflux treatment was started for the patient with postoperative vomiting. After the patient fed and got weight, he was discharged on the seventh day of surgery.

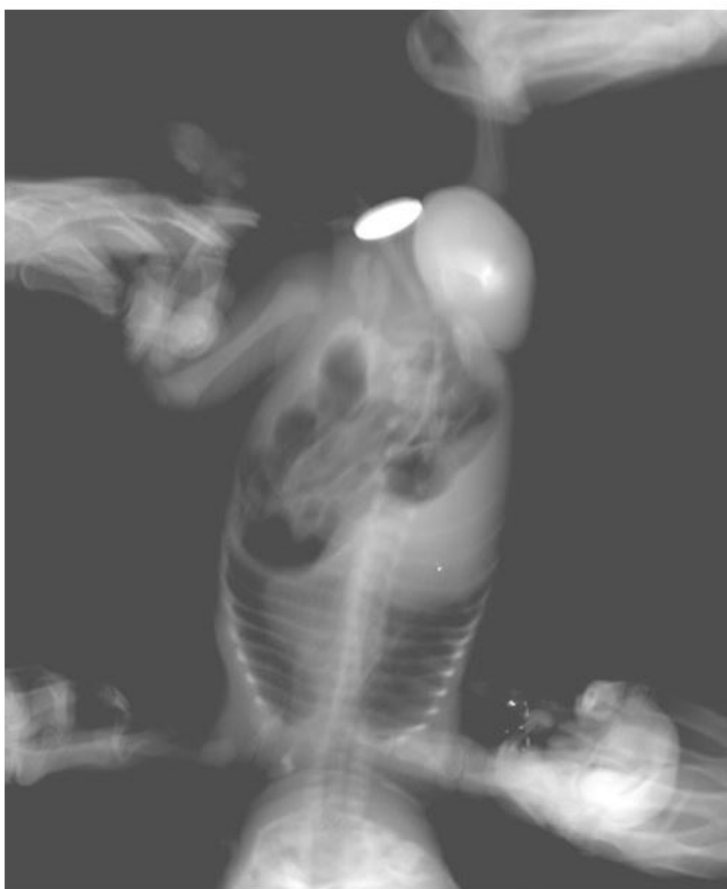


Figure 1: Anal atresia seen on the posteroanterior invertogram

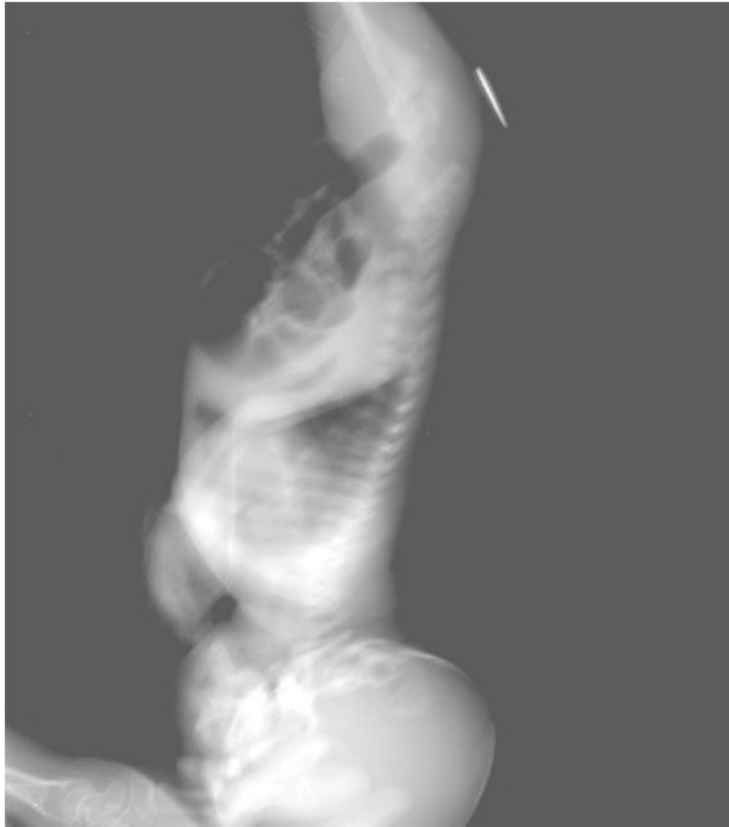


Figure 2: Anal atresia seen on the lateral invertogram



Figure 3: Grade 5 VUR on the left

The patient who had urinary tract infection 2 times after the discharge, was performed USG at 45 days. The thickness of the right kidney parenchyma has been 8.5 mm, the thickness of the left kidney parenchyma is 6 mm. Right renal pelvis AP diameter 15 mm, left renal pelvis AP diameter 18 mm. Right, and left ureter diameters were measured as 6 and 8 mm. Voiding cystourethrogram

was drawn to the patient. Grade 1 on the right, grade 5 VUR on the left seen (Figure 3), and the patient was made left subureteric injection (SUE). On the USG taken on the fourth day of postoperative, the thickness of the right kidney parenchyma has been 6 mm, the thickness of the left kidney parenchyma was 8 mm. Right renal pelvis AP diameter 4.4 mm, left renal pelvis AP diameter measured as 5 mm.

IHPS was considered in the patient with persistent vomiting. The olive sign was not palpated in physical examination. There was no electrolyte disturbance in the laboratory values. USG was repeated. Pyloric muscle longitudinal length 21 mm, single wall muscle thickness 7 mm measured. When the patient was 2 months, the pyloromyotomy was operated on. The patient who had no postoperative vomiting complaint was discharged.

Anorectoplasty was performed at 4 months. Ostomy was closed at 8 months. The patient did not have a urinary tract infection.

Reflux was not determined in the VCU withdrawing in the 6th month after sue. Both kidney sizes, renal parenchyma thicknesses, and pelvis AP diameters were normal in USG.

The patient had a urinary tract infection at three years old (100000 *Klebsiella oxytoca* reproduction in urine culture). The right kidney pelvicalyceal structures at USG were a lightweight dilate view. Pelvis AP diameter 7 mm was measured. VCU withdrawal to the patient. Medium dilatation was followed in right kidney pelvicalyceal structures and right ureter. The right ureter was light tortiosis. Grade 4 reflux detected on right (Figure 4). Right sue was done to the patient on 18 December.



Figure 4: Grade 4 VUR on the right

Conclusions

An anorectal malformation (ARM) occurs in one out of every 4000 to 5000 newborns and is twice as common in males [3]. Most babies (50% to 60%) with anorectal malformations have one or more abnormalities that affect other systems [3]. Higher abnormalities are associated with more malformations. Cardiovascular anomalies are present in approximately one-third of patients, but only 10% of these require treatment [3]. A wide spectrum of associated gastrointestinal anomalies has been described. Tracheoesophageal abnormalities occur in about 10% of cases [3]. Vertebral anomalies are common (30%) and the most frequent spinal problem is tethered cord [3]. Genitourinary system (50%) anomalies frequently accompany [3]. Vesicoureteral reflux is the most common anomaly found [3].

Vesicoureteral reflux (VUR) is defined as the abnormal retrograde flow of urine from the bladder across the ureterovesical junction up the ureter to the renal pelvis and tubules. VUR is a common problem and usually asymptomatic until in the presence of bacteriuria when pyelonephritis and the renal scar may ensue.

Infantile hypertrophic pyloric stenosis (IHPS) is one of the most common surgical conditions of the newborn. It occurs at a rate of 1 to 4 per 1000 live births [1,2]. Males are affected more often with a 4:1 male to female ratio [1,2]. Associated anomalies are found in 6-20% of patients [1,2]. These include esophageal atresia, malrotation of the bowel, Hirschsprung's disease, anorectal anomalies, cleft lip and palate, and urological anomalies [1,2]. Non-bilious, projectile emesis associated with a hypochloremic, hypokalemic metabolic alkalosis and a palpable "olive" in the epigastric area, in a full-term neonate who is between 2 and 8 weeks old, are classically described hallmark features of IHPS [1,2].

It is very important to detect additional anomalies and to plan the treatment process in babies born with congenital anomalies. Many diseases in newborns progress with nonspecific findings such as malnutrition, vomiting, and restlessness. Therefore, differential diagnosis is very difficult and a second anomaly can be easily overlooked. Although the coexistence of arm and gastrointestinal system pathologies is common, it is usually accompanied by tracheoesophageal fistula and esophageal atresia (TEF+EA) [4-7]. It is rarely seen with IHPS. In our case, first GER and then VUR was suspected in the patient who was operated on due to arm and postoperative vomiting continued. IHPS was considered as vomiting continued after VUR treatment. Olive was not palpated during the examination. The presence of a patient's previous abdominal surgical scar and colostomy may have obscured physical examination findings. Since the patient was hospitalized from the newborn period, electrolytes were closely monitored and therefore electrolyte imbalance did not develop. IHPS is a progressive disease whose etiology has not been fully elucidated [8]. The normal appearance of the pylorus muscle in the first USGs may be due to this. Nevertheless, the rate of patients diagnosed with IHPS after major abdominothoracic surgery is 0.25% in the literature [8]. It should be kept in mind that newborns with persistent vomiting may have IHPS. There is no specific treatment order for patients who have multiple anomalies and require more than one surgery to be corrected. There are not enough cases in the literature to create an algorithm. Each patient needs to be specially examined.

Declarations

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Consent for publication: not applicable

Availability of data and material: not applicable

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

All authors contributed during the writing our case report.

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