

## CASE REPORT

# Posterior Urethral Valve associated with Meconium Ileus: A Case Report

Rahul Gupta\*, Ramesh Tanger, Manika Boipai, Arun Kumar Gupta

Department of Pediatric Surgery, SMS Medical College, Jaipur, Rajasthan, India.

This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

### ABSTRACT

Association of posterior urethral valve with neonatal intestinal obstruction is rare; rarer still is its association with meconium ileus. A 1-day-old male presented with features of neonatal intestinal obstruction. Gastrografin enemas confirmed microcolon and were therapeutic. Later, the neonate developed overflow incontinence and deranged renal functions; micturating cystourethrogram confirmed posterior urethral valve. Cystoscopic valve fulguration was performed after stabilization; outcome was favourable.

**Key words:** Meconium ileus; Posterior urethral valve; Gastrografin enema; Microcolon; Neonatal intestinal obstruction

### INTRODUCTION

Posterior urethral valve (PUV) is the most common cause of bladder outlet obstruction in male neonates with an incidence of 1 in every 5000 live births.[1] Association of PUV with neonatal intestinal obstruction is unusual, but its association with meconium Ileus is an extremely rare occurrence.[1,2] We present a 1-day-old term male with features of neonatal intestinal obstruction with characteristic radiological findings of microcolon who responded to gastrografin enemas in neonatal intensive care. Further evaluation for overflow incontinence confirmed presence of posterior urethral valve.

### CASE REPORT

A 1-day-old term male neonate, 3rd in birth order, weighing 2500 grams presented with bilious vomiting, abdominal distension, and delayed passage of meconium beyond 24 hours following birth. Antenatal ultrasounds were not done; there was no maternal medical illness. On examination, neonate was dehydrated, mildly jaundiced and hemodynamically stable. Abdomen was moderately distended, but, soft with visible small bowel loops. There was absence of meconium staining in the perineum. Laboratory investigations revealed normal hemogram and electrolytes, euglycemia with hypocalcaemia (serum Calcium- 8mg %), physiological

hyperbilirubinemia (Total serum Bilirubin- 7.73 mg %), CRP positive; thyroid functions were normal. Abdominal Radiograph revealed dilated small bowel loops suggestive of neonatal intestinal obstruction.



Figure 1: A) Gastrografin enema (AP view) showing microcolon with dilated small bowel loops. B) lateral view.

Neonate was resuscitated with intravenous fluids, supportive care with placement of infant feeding tube; nasogastric aspirate was 30cc bilious. Patient passed small quantity of meconium following normal saline (10cc) enema. Gastrografin enema confirmed microcolon (Fig.1). Repeat enema was therapeutic and patient passed plenty of meconium. The neonate also developed overflow urinary incontinence with palpable urinary bladder and deranged

**Correspondence\*:** Dr. Rahul Gupta, Assistant Professor, Department of Pediatric Surgery, SMS Medical College, Jaipur, Rajasthan India

E mail: meetsurgeon007@gmail.com

Submitted: 19-03-2019

Conflict of interest: Nil

© 2019, Gupta, et al

Accepted: 21-11-2019

Source of Support: Nil

renal functions (serum urea- 64 mg %, serum creatinine- 2.42 mg %). Catheterization was done with infant feeding tube no. 6. Renal functions improved with bladder decompression. Urine cultures were sterile; abdominal ultrasound and micturating cystourethrogram confirmed posterior urethral valve without any vesicoureteric reflux (VUR). Echocardiogram showed patent foramen ovale (2.3 mm) with left to right shunt. Cystoscopic valve fulguration was performed at the age of 1 month. The post-operative course was uneventful. The child is on exclusive breast feeding and gaining weight on follow-up.

## DISCUSSION

Neonatal intestinal obstruction has many differential diagnoses such as intestinal atresias, malrotation and volvulus, meconium ileus, intestinal duplication cysts, meconium peritonitis, anorectal malformations (ARM) etc.[3,4] Anal inspection is very essential to exclude ARM. Plain radiographs of the abdomen cannot pinpoint the diagnosis in every case however depict air fluid levels indicative of intestinal obstruction, and differentiate obstruction of small bowel from large bowel.[4,5] Microcolon or unused colon is defined as a colon of abnormally small caliber was demonstrated by gastrografin contrast enema study.[5] Microcolon is characteristically seen with small bowel obstruction in newborns. Contrast enema study was both diagnostic (ruled out jejuno-ileal atresias and total colonic aganglionosis in our case) and therapeutic (effective clearance of meconium).[5] Similarly in the index case, the contrast enema proved diagnostic as well as therapeutic resolving intestinal obstruction due to excretion of inspissated meconium.

PUV in neonatal period may present as urinary retention, urosepsis, dehydration and dyselectrolytemia, metabolic acidosis, pyuria, failure to thrive and ambiguous abdominal signs. PUV may rarely present in the neonatal period in association intestinal obstruction.[2] The cause could be urinary ascites, distended bladder, urinoma causing bowel compression or dyselectrolytemia.[1,2] Urinoma or extravasated urine in the retroperitoneal space, distended bladder may produce mass effect and result in extrinsic intestinal compression.[6] All these precipitating factors leading to sub-acute intestinal obstruction were absent in our case. In the index

case, PUV was found with concomitant meconium ileus which is a rare occurrence on literature search. PUV rarely co-occurs with other GIT disorders.[1]

Priorities in patients with PUV are: (a) fluid resuscitation, (b) catheterization, (c) administration of urinary specific antibiotics (tailored after urine c/s) and (d) renal function monitoring. Early cystoscopic ablation of PUV delays the progression of renal damage and is the treatment of choice after improvement of renal functions and stabilization of neonate.[1] Similarly, in the index case, valve fulguration was performed after initial stabilization of the baby.

In conclusion, the concurrence of PUV and meconium ileus is an extremely rare event. Both may have a common etiopathogenesis but more research is needed to identify and understand it.

**Consent:** Authors declared that they have taken informed written consent, for publication of this report along with clinical photographs/material, from the legal guardian of the patient with an understanding that every effort will be made to conceal the identity of the patient however it cannot be guaranteed.

**Author Contributions:** All the authors contributed fully in concept, literature review, and drafting of the manuscript and approved the final version of this manuscript.

## REFERENCES

1. Kumar M, Batra G, Maletha M, Malhotra A. Hirschsprung's disease in a child with posterior urethral valve: An unwanted association. *Indian J Urol.* 2018; 34:223-5.
2. Bhowmik A, Banerjee D, Sinha R, A3, Lahiry S. Urinoma secondary to posterior urethral valve presenting with features of intestinal obstruction in a neonate. *J Clin Diagn Res.* 2017; 11:4-6.
3. Loening-Baucke V, KIMURA K. Failure to pass meconium: diagnosing neonatal intestinal obstruction. *Am Fam Physician.* 1999; 60:2043-50.
4. Gupta R, Tiwari K, Sharma CS, Goyal RB. Milk curd syndrome in a neonate fed with goat's milk. *J Neonatal Surg.* 2017; 6:88.
5. Lo WC, Wang CR, Lim KE. Microcolon in neonates: clinical and radiographic appearance. *Clin Neonatol.* 1998; 5:14-8.
6. Cho A, Khan A, Chandran H, Carroll D. Bilious vomiting in two neonates due to an urinoma secondary to posterior urethral valves. *J Ped Surg Case Rep.* 2015; 3:541-4.