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Neonatal Small Left Colon Syndrome in a Baby of Nondiabetic Mother: A Case Report

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Abstract

Neonatal small left colon syndrome is an uncommon, functional disease of the lower colon resulting in signs and symptoms of intestinal obstruction, mainly seen in babies born to diabetic mother. We report an extramural, term male newborn who presented with abdominal distension at sixteen hours of life. Contrast enema revealed small left colon syndrome (NSLCS). It was diagnostic and therapeutic procedure. Baby completely recovered without undergoing surgery, accepted full enteral feeds and was discharged.

Keywords: Small left colon Syndrome; Newborn; Nondiabetic Mother

Introduction

Neonatal small left colon syndrome is an uncommon, functional disease of the lower colon resulting in signs and symptoms of intestinal obstruction. Neonatal small left colon syndrome (NSLCS), was at first reported in 1974 by Davis et al [1]. It is typified by an abrupt transition of intestinal caliber at or near the splenic flexure. Nearly above 50% of affected patients are born to diabetic mothers and the condition often recovers spontaneously [1,2]. We managed our baby without surgical intervention.

Case report

An outborn, term 39+2 week male baby with birth weight of 3500 grams, a product of non consanguineous marriage was born to a 22 years old primi-gravida mother by vaginal delivery. Antenatally, mother was hypothyroid and was on Thyronorm 50 ug/day. At birth baby was born vigorous with Apgar scores of 9 and 9 at1 and 5 minutes respectively. Baby was started on breastfeeds but developed abdominal distension at about 16 hours of life, which was gradually increasing. Baby was referred to our hospital at 40 hours of life in view of abdominal distension. Baby had not passed meconium since birth. On examination HR-148/min, RR-56/min, afebrile, pink, CFT< 3 sec, sPO2-99% in room air. Abdomen was tensed and distended with visible bowel loops and with bowel sounds present. At admission, baby was kept NPO, IVF and started on IV Piperacillin Tazobactam, Amikacin, Metronidazole. Initial possibility of intestinal obstruction, Hirschsprung's disease (HD), Meconium plug, colonic stenosis and atresia were considered. Abdominal X ray revealed dilated bowel loops(Figure 1 and 2). Contrast enema was done which showed contracted sigmoid, descending, distal transverse colon, rectal diameter normal (Figure 3 and 4). Possibilities long segment HD and small left colon syndrome were considered. Baby passed large volume meconium after contrast study. Feed was introduced on day 3 of admission ,after baby passed stool multiple times and abdominal distension decreased, and was gradually increased to full feed by day 5 of life which baby tolerated well .Thereafter, baby remained well and accepted feed with no abdominal distension. I/V antibiotics were stopped on day 6 of life, after blood c/s was sterile. Baby was discharged on day seven of admission. Baby remained well, accepted feeds and no recurrence of symptoms in follow up.

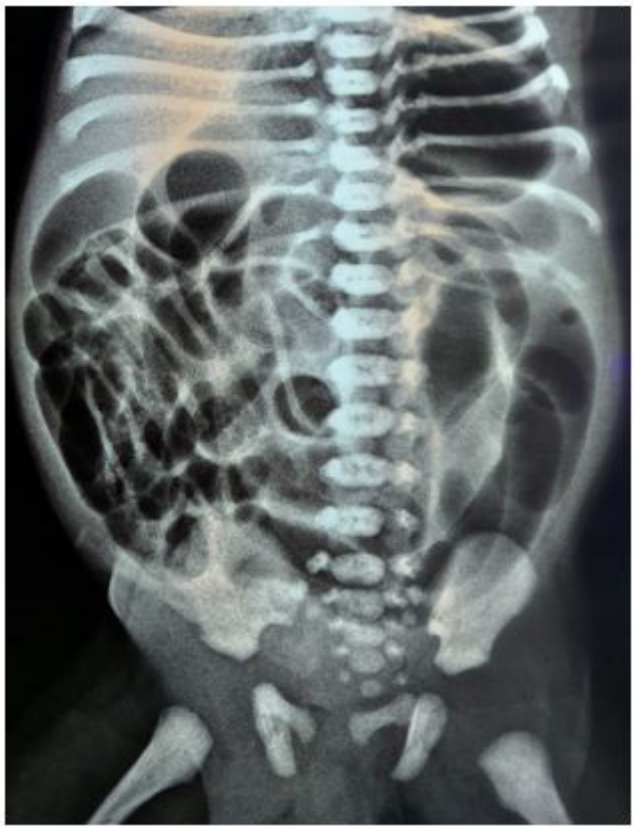

Figure 1: Supine AXR showing dilated bowel loops

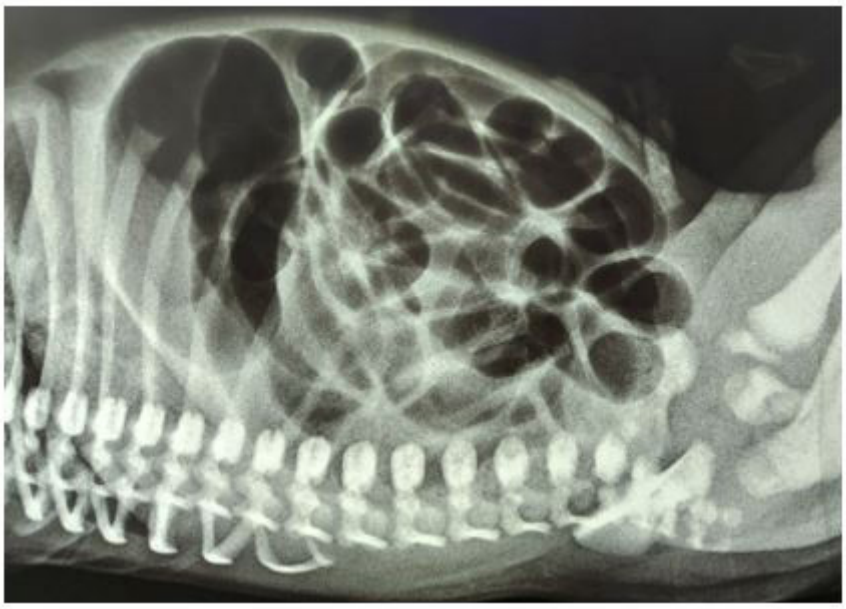

Figure 2: Lateral AXR showing dilated bowel loops

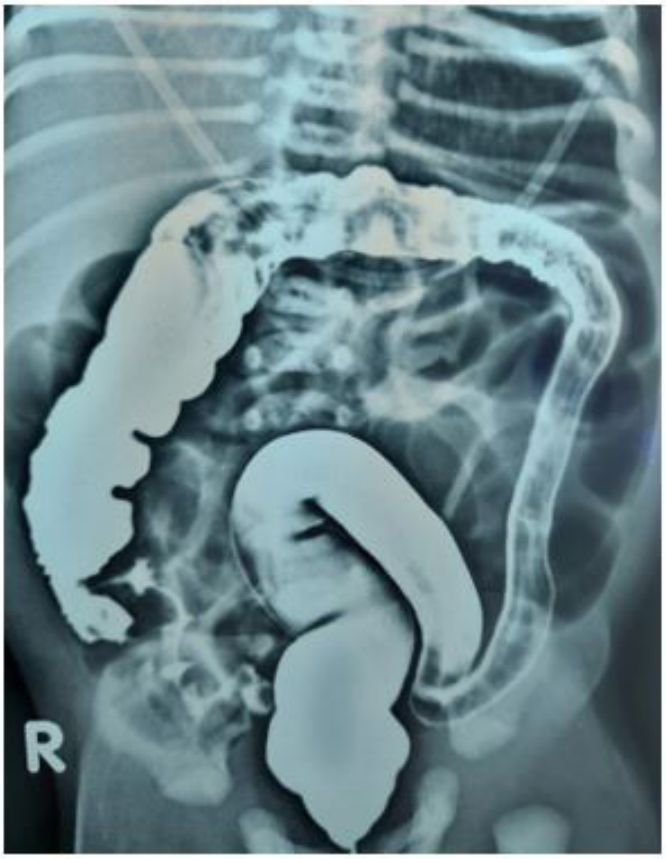

Figure 3: Contrast enema study showing small left colon

Discussion

Neonatal small left colon syndrome(NSLCS) is a rare functional disease of the lower colon manifesting with features of intestinal obstruction, characterized by an abrupt transition of intestinal caliber at or near the splenic flexure [3,4]. It principally involves the sigmoid and descending colon and is isolated to meconium inspissation or agangliosis [4,5]. Although Meconium plug syndrome, meconium ileus and HD present similarly but are characterized by the absence of meconium retention and the lack of ganglion cells in the distal intestinal tract [6].

Although the etiology is not known, but several theories like functional immaturity of the ganglion cells, abnormal autonomic nervous system ,any drug use by the mother [6] and immaturity of bowel innervations and motility in term babies are considered as the important cause in NSLCS [3,5,7].

Nearly half of the babies with NSLCS are born to diabetic mothers [5,8,9,10]. Eclampsia, fetal hypoglycemia and sepsis are amongst other factors. In babies of diabetic mothers, hypoglycemia leads to the sympathetic nervous system activation causing reduced left colon peristaltic movements and the vagal stimulation leading to enhanced motility to the level of the splenic flexure. Even increased glucagon levels due to hypoglycemia or sepsis manifest in decreased peristaltic movement in the left colon leading to increased absorption of water, and eventually leads to abnormal meconium formation [8].

Clinically NSLCS babies present with history of non passage of meconium in the first 24 hours after birth, progressive abdominal distension and vomiting. Sometimes may present lately with bowel perforation and peritonitis [8]. Our baby presented with abdominal distension and non passage .

The diagnosis of this condition is by plain radiograph of the abdomen and contrast enema. Plain radiograph shows features of intestinal obstruction. Supine AP view shows dilated bowel loops while the supine lateral view showed distended loops of bowel with air fluid levels. Some cases with perforation show features of pneumoperitoneum such as Rigler's sign on supine anteroposterior radiograph and free air under the anterior abdominal wall on supine view. The common differentials for colonic obstruction , are the meconium plug syndrome, Hirschsprung's disease, low colonic atresia or stenosis, or the NSLCS[11,12]. Contrast enema is diagnostic and also therapeutic in such condition. It shows a dilated ascending and transverse colon with abrupt change in caliber (transition) at the splenic flexure and a small caliber left colon with dilatation of rectum and sigmoid colon, as shown in our case and also reported by others [9,10]. In some cases a large mucous plug may be seen as a filling defect in the splenic flexure and may be dislodged proximally during colonic filling in contrast enema. The recto-sigmoid index (normal neonatal rectum is of greater caliber than sigmoid colon) is preserved [3]. HD has a splenic flexure transition zone, the rectum is abnormally narrowed with reversal of the recto-sigmoid index [13,14]. Meconium inspissation or ileus are mostly associated with cystic fibrosis. A contrast enema in colonic atresia usually reveal a blind-ending colon with a convex distal border at the atretic site [3,13,14].

NSLCS is usually a self resolving condition, in which contrast enema acts as a stimulant ensuing passage of meconium and thus leading to progressive improvement in symptoms [7,9,10]. Surgery is indicated if there is no improvement in obstruction following contrast enema or in case of intestinal perforation [3,5]. After surgical resection post operative complications like surgical site infection, anastomotic leakage, intraabdominal abscess, bleeding, short bowel syndrome might occur[15].

Conclusion

Even if neonatal small left colon syndrome (NSLCS) is a rare condition, with the use of plain abdominal radiograph and contrast enema diagnosis becomes easy and helps in early treatment.

Learning Points

Neonatal small left colon syndrome (NSLCS) should be considered as differential for neonatal intestinal obstruction.

Contrast enema is usually diagnostic and therapeutic.

NSLCS has a favorable prognosis

Patient's Consent:

Taken from the baby's father.

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