

Large Lactobezoars Causing Postoperative Small Bowel Obstruction in a Neonate- A Case Report and Review of Literature

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ABSTRACT

Lactobezoars causing small bowel obstruction in the postoperative period has been rarely reported. Here, a term baby with severe intrauterine growth restriction was admitted in neonatal unit for low birth weight care. Baby was started on mother's milk and gradually upgraded to full feeds. He developed Necrotising Enterocolitis (NEC) requiring surgery. Subsequently, amino acid based formula was warranted because of Short Bowel Syndrome (SBS). After reaching full feeds, baby demonstrated signs of small bowel obstruction requiring relook laparotomy. Large lactobezoars were found throughout the small bowel which were kneaded out. Postoperative period was also complicated by Enterocutaneous Fistula (ECF) which was conservatively managed. Child was discharged on full feeds after he showed consistent weight gain.

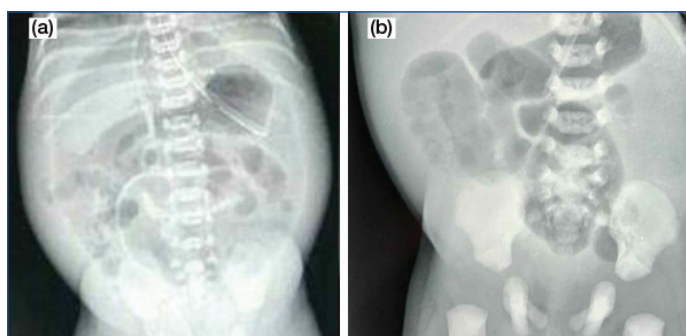
Keywords: Intestinal obstruction, Laparotomy, Short bowel syndrome

CASE REPORT

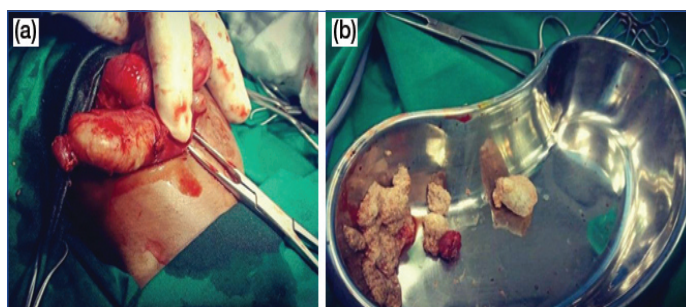
A term male neonate with birth weight of 1800 grams was delivered by caesarean section in view of intrauterine growth retardation and significant doppler changes. On day 6 of life, he developed Necrotising Enterocolitis (NEC). Despite conservative management, NEC progressed to perforation and pneumoperitoneum necessitating resection of majority of ileum with double barrel ileostomy [Table/Fig-1]. Remaining proximal small bowel length was visualised to be short.

Following postoperative stabilisation, enteral feeds with breast milk was initiated on postoperative day 5 and was slowly advanced with monitoring of stoma output and hydration status. With progression of feeds, stomal output increased, necessitating parenteral nutrition and hydration. Intestinal failure secondary to short bowel was diagnosed. Many feeding strategies for Short Bowel Syndrome (SBS) like slow increase in feeds, hourly feeds followed by continuous feeds and drugs such as loperamide, H₂ blockers and cholestyramine were tried, but stomal output remained high. At first month of life, baby was started on elemental amino acid based formula in appropriate dilution. Stomal output gradually reduced and the baby was transitioned to full enteral feeds.

After five days of reaching full feeds, baby developed abdominal distension, bilious vomiting with nil output from stoma. Radiographs showed paucity of bowel loops [Table/Fig-1]. Ultrasound abdomen revealed an echogenic mass proximal to stomal site. Intestinal obstruction was suspected and baby was taken up for relook laparotomy. Intraoperatively, the stoma was found retracted and large lactobezoars were found extending from the just inside the stoma to 20 cm proximally and these were carefully milked out [Table/Fig-2]. Adhesions were released and ileo ascending colon anastomosis was done after excising unhealthy ileum, caecum and appendix. Feeds were restarted once the baby passed stools and gradually increased. One week later, the baby developed stool leakage [Table/Fig-3] through an ECF, with a subsequent gastrografin study, revealed a high small bowel communication. Following conservative management, with total parenteral nutrition and subcutaneous octreotide, the faecal leak gradually stopped and full enteral feeds could be re-established. Octreotide was tapered and stopped after three weeks. On the last follow-up baby was six-month-old and was gaining weight steadily. He had doubled his birth weight and has attained head control, social smile and recognised his mother.



[Table/Fig-1]: a) Pneumoperitoneum following NEC and perforation; b) Paucity of bowel loops before relook laparotomy.



[Table/Fig-2]: a) Massive lactobezoars throughout the residual small bowel causing obstruction; b) Lactobezoars kneaded out of the small bowel.



[Table/Fig-3]: a) Wound gaping after the relaparotomy done for lactobezoars; b) Leak from the Enterocutaneous Fistula (ECF) managed successfully with octreotide.

Author	Year	GA (wk)	Birth weight (gm)	Day of onset of signs	Nature of feeds	Level of obstruction	Intervention	Outcome
Lowichik A et al., [2]	1999	34	1790	80 days	Elemental amino acid based formula	Transverse colon	Surgery	Discharged
Lowichik A et al., [2]	1999	34	1740	92 days	Elemental amino acid based formula	Terminal ileum	Surgery	Discharged
Present case	2021	37	1800	45 days	Elemental amino acid based formula	Ileum	Surgery	Discharged

[Table/Fig-4]: Characteristics of neonates with lactobezoars in the postoperative period in the literature and the present case report [2].

DISCUSSION

Intestinal lactobezoars are very rare in neonates when compared to those forming at gastric outlet [1]. Only two cases of intestinal lactobezoars following abdominal surgery, have been reported till now [2]. Lactobezoars, consisting of aggregated undigested milk constituents, are the most common type of bezoars found in infants. The most common site is stomach and presentations are those of gastric outlet obstruction like abdominal distension, non bilious emesis, palpable epigastric mass and dehydration [3]. In most of the cases, ultrasound picks up lactobezoars in the form of echogenicity [4]. The N-acetyl cysteine has been tried in few cases and found to be useful in causing dissolution of the gastric lactobezoars [4,5].

The proposed risk factors are prematurity and the use of over concentrated bovine formula feeds with low whey protein [3]. The child was on an elemental amino acid based formula which was given in appropriate dilution and none of the other aforementioned risk factors for lactobezoar formation, were found in present case. The pre-existing SBS, decreased motility and stomal obstruction due to adhesions could have precipitated the formation of milk curds, resulting in the large bezoars.

In present case, lactobezoar caused ileal obstruction in the postoperative period after ileal resection for NEC. The signs in present case did not resolve following gastrografin enema. Around 38 cases of small bowel obstruction secondary to lactobezoars have been reported in the literature and 29 of them required laparotomy [1,2,6-9]. In around four cases, lactobezoars resolved with gastrografin enemas [8]. However, only two of the 38 babies had small bowel obstruction in the postoperative period and none of the other babies had history of surgery prior to the symptoms [1,2,6-9]. Characteristics of these two babies are elaborated in [Table/Fig-4] [2].

Lactobezoars in present child was large and extending for a length of 20 cm and was removed. Re-anastomosis was opted, instead of stoma during relaparotomy, because the bowel length was already very short and chances of gut adaptation would be very low

after ileostomy. The subsequently developed ECF was managed conservatively in present case. Successful closure with octreotide has been previously reported in five cases of ECF in neonates following NEC [10]. Octreotide accelerates fistula closure by decreasing the volume and enzyme content of intestinal secretions, prolonging gastrointestinal transit time, increasing hydroelectrolytic absorption.

CONCLUSION(S)

Lactobezoars, though rare, can cause small bowel obstruction even with appropriately diluted milk in the setting of previous surgery and adhesions. Ultrasound abdomen can help in diagnosis and relook laparotomy is often required for evacuation. The ECF can occur after extensive bowel resection surgery in neonates and conservative management with octreotide, is very much feasible.

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