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EARLY ORAL FEEDING AFTER PEDIATRIC INTESTINAL ANASTOMOSIS

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ABSTRACT

A prospective nonrandomized study of 29 children aged <13 years over a period of 2 years was conducted to evaluate the effects of early oral feeding (EOF) in children with intestinal anastomosis. Patients undergoing elective or emergency intestinal anastomosis below the ligament of Trietz with no contamination were included while contaminated cases and neonatal atresias were excluded. First feed was the direct oral feed started within 24 h, usually the morning after surgery. Liquid feeds were started initially and increased at 4 hourly increments to appropriate feed for age. Time to full feeds was recorded. Patients were monitored for vomiting, abdominal distension, and signs of leak. Time to first stool and length of hospital stay were recorded. Median age of patient was 12 months. 16 children didn't vomit at a rate of (55.17%), and in cases where vomiting occurred, it was transient and resolved spontaneously . Abdominal distension occurred in 4 children and lasted (6-12) hours, the average time for hearing peristaltic movements was 2.3 days and the range (2-4) days, the average time for the first defecation was 3.4 days and the range was (1-5) days, the average time to reach full feeds was 4.6 days and the range was (3-6) days, the average time for discharge was postoperative day 6 and the range (5-9) days. Early enteral feeding in pediatric intestinal anastomosis can be safely started without looking for traditional markers of return of bowel activity. It lowers hospital stay with no adverse effects. Generalization of this concept to selected emergency and neonatal surgeries can be considered, but needs further randomized control trial to validate.

KEYWORDS: Early oral feeds. Intestinal anastomosis. Bowel activity.

INTRODUCTION

It is a common practice to keep a child nil by mouth after intestinal anastomosis until the return of bowel movements and many times as per the personal preference of the surgeon. Little scientific evidence supports this practice. Possible factors contributing to postoperative ileus are bowel manipulation, anesthesia, inflammatory response to surgery, and perioperative narcotics.[1,2] Withholding enteral feeds does not eliminate the 1–2 l of endogenous fluids which go past the anastomosis. Schilder et al. have demonstrated that bowel activity occurs before the passage of flatus.[3] Bowel sounds may or may not be present with normal bowel activity.[4] Studies have shown quicker return of bowel function with feeding.[5–7] ESPEN guidelines recommend early initiation of enteral feeding within 24 h after gastrointestinal surgery, but also state that it needs to be adapted according to the individual tolerance and type of surgery.[8] There are many studies and meta-analyses supporting early feeding in adults[9–11], but few in children.[12–15] Hence, this prospective study was conducted to evaluate the effects of early oral feeding (EOF) in children with intestinal anastomosis without waiting for evidence of return of bowel activity.

MATERIAL AND METHODS

This was a prospective nonrandomized study of 29 children (17 males 59%) and (12 females 49%) their ages ranged between one month and 12 years with an average of 12 months admitted to the Pediatrics and Pediatric Surgery Division and who underwent elective or emergency intestinal anastomosis below the ligament of Trietz with no contamination at Tishreen University Hospital, Lattakia, Syria during the period between March 2019 and March 2021 to evaluate the effects of early oral feeding after Intestinal anastomoses.

The nasogastric tube was removed after completion of surgery. All elective patients received a single prophylactic dose of Ceftriaxone, Metonidazole.

First feed was started within 24 h,usually the morning after surgery, without observing bowel sounds. Feeds were started with liquid diet initially and increased at 4 hourly increments onto appropriate feed for age. Older children were advised liquids initially and later soft and normal diet as the patient desired. Passage of first stool and time to full feeds were recorded. Patients were monitored for vomiting, abdominal distension, and evidence of anastomotic leak. Feeds were delayed for 6 h if vomiting or abdominal distension occurred. If intolerance continued, feeds were deferred for a further 24 h. Duration of postoperative hospital stay was recorded.

RESULTS

A total of 29 patients satisfied the inclusion criteria. The number of emergency operations was 19 by 66%, while the elective operations were 10 by 34%. The age group ranged from 1 month to 12 years. The median age was 12 months. 16 children did not vomit at a rate of 55.17%, and in cases where vomiting occurred, it was transient s transient and resolved spontaneously. Abdominal distension occurred in 4 children and lasted (6-12) hours, the average time for hearing peristaltic movements was 2.3 days and the range (2-4) days, the average time for the first defecation was 3.4 days and the range was (1-5) days, the average time to reach full feeds was 4.6 days and the range was (3-6) days, the average time for discharge was postoperative day 6 and the range (5-9) days.

• We found that children who underwent elective surgery had their first defecation earlier than children who underwent emergency surgery.

DISCUSSION

Traditionally after abdominal surgery, presence of bowel sounds or passage of flatus or stools has been the clinical evidence of restoration of bowel activity and indicators for starting oral diet. Our study questions the need to look or wait for signs of return of bowel activity in cases where there was no peritoneal contamination. Bowel sounds are poor markers of bowel function as uncoordinated and antegrade peristalsis can be heard as bowel sounds. Currently, there is no good marker for return of bowel sounds, and even in the presence of prolonged ileus, the bowel moves.[4] Reissman et al. reported that majority of patients tolerated solid diet before their first bowel movements.[16]

It has been shown in animals that the period of fasting reduces the collagen content in anastomotic tissue and diminishes the quality of healing, and on the other hand, feeding reverses mucosal atrophy induced by starvation and increases collagen deposition and strength of the site of anastomosis.[17,18,20] An experiment on a rat peritonitis model which was fed early has shown a decrease in tumor necrosis factoralpha and a higher anastomotic bursting strength.[19]

Early oral feeding in intestinal anastomosis is well documented in adults.[9–11] Cochrane reviews have shown no advantage in keeping patients "nil by mouth" following gastrointestinal surgery and support early commencement of enteral feeding.[9] There are very few studies done in children related to early oral feeding postintestinal surgeries. A study by Surasak Sangkhathat et al. concluded that early enteral feeding in pediatric patients undergoing limited colonic anastomosis stimulated early bowel movements and reduced hospital stay.[12] In another study by Gulsen Ekingen et al. where early enteral feeding in newborn surgical patients (including atresias) was started within 8–20 h of surgery, irrespective of bowel movements and defecation, it was found that early small-volume feeds were well tolerated, and benefits were valuable regardless of type of abdominal surgery.[15] Another recent study by Sholadaye et al. in African children, which included elective and emergency cases with contamination, concluded that early feeds following intestinal anastomosis in children are safe, particularly in a setting of limited availability of parenteral nutrition.[13,14] But the criterion for early feeds in this study was feed started before 72 h unlike most other studies where the criterion is taken as within 24 h.

CONCLUSION

Early oral feeding in pediatric intestinal anastomosis decreases the hospital stay and can be safely started without waiting for traditional markers of return of bowel activity.

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