

Case Report

Multiple Post Inflammatory Strictures of the Ascending Colon in Neonate

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Abstract

Infectious and inflammatory disease states have been associated with colonic strictures. These stricture formations are frequently single and localized in the left colon. Multiple strictures can occur 15% and localization of these in colon ascendens like our case, has not been reported in the literature. We report a 51 days old female child which was born through cesarean section because of chorioamnionitis to an otherwise healthy thirdgravid mother. The 45th day after birth an incomplete ileus was revealed with abdominal distention and bilious vomiting. The operative findings were dilated intestinal loops and two consecutive strictures in the ascendens colon and hepatic flexure. Local resection of the pathological bowel was done and primary ileocolic end to end anastomosis was performed.

Keywords: inflammatory bowel disease, colonic strictures, colon ascendens

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INTRODUCTION

Various inflammatory, infectious, traumatic and neoplastic processes can lead to acquired colonic stenosis in neonate. Of these necrotizing enterocolitis is the most common. The reported overall incidence varies from 9%-36% (Horwitz JR et al 1995, Simon NP 1994) and stricture formation is more frequent after conservative management. Most patients have single

strictures localized in 60% on the left colon but multiple strictures can occur 15% (Janik JS et al 1981). Stenosis usually occurs within 3 months after the initial clinical image. The diagnosis is established by contrast enema radiography. Treatment consists of segmental surgical resection.



Figure 1. Obstruction of colon ascendens



Figure 2. Multiple obstructions of colon ascendens

Case Report

A 51 days old female child was born through cesarean section because of chorioamnionitis to an otherwise healthy thirdgravida mother. The child's gestational age was 28w and his weight 1.120gr.

The early onset childbirth and the positive CRP of the mother was the main reason covering the infant with ampicillin and vancomycin antibiotics immediately after birth.

On 7th day of life the infant showed a clinical image of general infection and a *Staphylococcus aureus* microorganism from the umbilical catheter was isolated.

The 45th day after birth an incomplete ileus was revealed with abdominal distention and bilious vomiting. A contrast enema radiography was performed with the presence of multiple obstructions of the colon (Figure 1, Figure 2).

The child was taken to the operating room to perform a diagnostic laparoscopy. Due to the dilated intestinal loops the above process stopped and open laparotomy was done.

The operative findings were dilated intestinal loops and two consecutive strictures in the ascendens colon and hepatic flexure. Local resection of the pathological bowel was done and primary ileocolic end to end anastomosis was performed. Histopathology of the resected colon showed post inflammatory strictures with absence of tunica muscularis and the presence of granulation with fibrosis.

The recovery was smooth and the patient discharged on 13th postoperative day. The patient was doing well on long term follow up.

DISCUSSION

Infectious and inflammatory disease states have been associated with colonic strictures. Cultures obtained from the blood, stool and peritoneal cavity commonly grow

E.coli, *Klebsiella pneumoniae*, *Proteus mirabilis*, *Staphylococcus aureus* and *epidermidis*, *Pseudomonas aeruginosa* and others.

The pathogenesis of bowel stricture following necrotising enterocolitis depends on the degree of the ischemic injury of the bowel wall, as (Marston et al 1966) suggested.

If the mucosa and tunica muscularis are destroyed like our case, healing is by proliferation of granulation tissue and fibrosis, leading in stricture formation.

These stricture formations are frequently single and localized in the left colon. Multiple strictures can occur 15% and localization of these in colon ascendens like our case, has not been reported in the literature.

The operation for multiple stricture involving long bowel segment consists of resection of the pathological bowel segment and primary anastomosis for healthy infants. In our case, we tempted a laparoscopic approach without results because of the dilated intestinal loops. An end to end ileocolic primary anastomosis was performed. In case of excessively dilated proximal intestine and narrow peripheral segment, a loop colostomy preferred to save the life of patient with an end to end anastomosis in second stage. Alternatively, we can try a remodeling technique of the central intestine with primary anastomosis and loop colostomy.

CONCLUSION

Stricture formations are more frequent after conservative management of necrotizing enterocolitis. For these reason, we must pay attention in every episode of incomplete or complete ileus and after obtained imaging control to perform a bowel resection and primary anastomosis or loop colostomy.

REFERENCES

Horwitz, JR, Lally, KP, Cheu, HW. et al (1995). Complications after

surgical intervention for necrotizing enterocolitis: A multicenter review. J Pediatr Surg 30:994
Janik JS, Ein SH, Mancer K (1981). Intestinal strictures after necrotizing enterocolitis. J Pediatr Surg 16:438

Marston A, Phiels MT, Thomas ML, Morson BC (1966). Ischemic colitis. GUT 7:1
Simon NP (1994). Follow up for infants with necrotizing enterocolitis. Clin Perinatol 21:411