Terminal Ileal Adhesions- An Entity Needing To Be Recognised and Treated In Recurrent Abdominal Pain (RAP)

Abstract

Recurrent abdominal pain (RAP) is a common problem of childhood.

Over the past 15 years we have been using diagnostic laparoscopy as a tool in those selected cases which do not respond to conservative treatment. In a large proportion of these patients (even if never operated earlier) we have identified adhesions of the terminal ileum (211/436). We have also found these adhesions in 7 children who were earlier subjected to laparoscopic appendectomy for RAP but continued to have pain.

We have been releasing these adhesions so as to straighten the terminal ileum. All these patients were pain-free for more than a year.

We feel that terminal ileal adhesions are an important contributor in the etiology of recurrent abdominal pain and their identification and release is important to releive the patient of the pain.

Conceptual Paper

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Introduction

Recurrent abdominal pain (RAP) is a common problem and a therapeutic challenge of childhood [1].

One of the commonest presentation of these children is peri-umbilical colics which essentially indicates a spasm emanating from a segment of the midgut. Such a colic could indicate a partial obstruction to some portion of the midgut.

Over the past 15 years, we have been using diagnostic laparoscopy as a tool in those selected cases which do not respond to conservative treatment. In a large proportion of these patients (211/436), we have identified adhesions of the terminal ileum to the lateral abdominal wall similar to the peritoneal folds found in a case of paracecal hernia (Figure 1). We have also found these adhesions in 7 children who had earlier undergone laparoscopic appendectomy for RAP but continued to have pain.

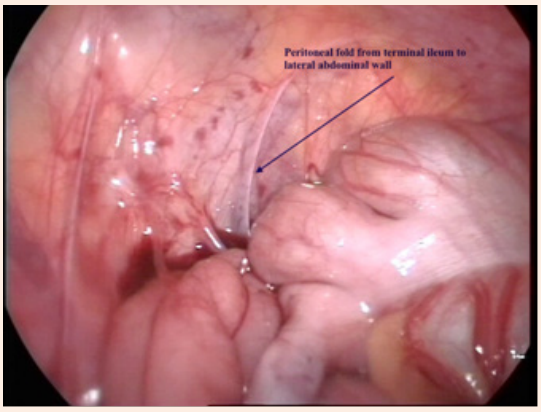

Figure 1: Fold of peritoneum from terminal ileum to lateral abdominal wall creating a possible loculus for an internal hernia.

We have been releasing these adhesions so as to straighten the terminal ileum. All these patients were pain-free for more than a year.

Materials and Methods

Over the past 15 years (2000-2015), we have been referred 916 pediatric patients for RAP. Each of these patients underwent a defined protocol of evaluation consisting of detailed clinical history, examination and relevant investigations (Tables 1 & 2). A clinical assesment for possibility of functional disturbances is also made. In view of the relatively high incidence of gastro-intestinal infections and infestations in our society [2], each of these children receives a scheduled course of antibiotics, anti-helminthics and anti-protozoals by us. Whereas, this could result in some children receiving unnecessary antibiotics, we feel the necesity to administer the same in view of the significant response to such a regime and to avoid unnecessary diagnostic laparoscopies. Patients with epigastric symptoms and signs also receive an emperical trial with proton pump inhibitors and antacids for 6 weeks. Of these 916 patients, 436 patients whose symptoms persiste, were subjected to diagnostic laparoscopy.

This is performed through a standard 3 port technique (Figure 2). The abdomen is explored for any localised area of inflammation, stricures if any of the bowel, adhesions, bands or malrotation. In a female child, adnexal pathologies are also looked for.

We have found a significant number of children (211/ 436) who had peritoneal adhesions kinking the terminal ileum or kinking the appendix (Figure 3). 7 of these patients had already been subjected to a laparoscopic appendectomy earlier (by other surgeons) for the RAP but had not got adequate relief from their pain. In some cases, inflammatory adhesions were identified between the lateral abdominal wall and the terminal ileum (Figures 4a&4b).

Table 1: Clinical assesment of children with RAP.

Mandatotory Assesment of Symptoms
1. Pain
a. Duration of pain b. Location of pain c. Frequency of pain d. Relation to food e. Relation to schooling f. Relation to play g. Disturbance of sleep
2. Constipation if any
Whether relief of constipation relieves episodes of pain.
3. Urinary complaints if any
4. Menstrual history if positive and if any relation to the episodes of pain (in older female children).

Table 2: Mandatory Investigations in a case of RAP.

Mandatotory Investigations
I. Hemogram II. Urinanalysis III. Stool examination for protozoal infestations IV. USG abdomen. V. Distal GI contrast studies/ CT abd in selected cases.
1. A therapeutic trial of
• Anti-protozoal + antibiotic for 7 days. • Anti-helminthic in selected cases.

Figure 2: Showing the location of the 3 ports (marked X) used for laparoscopic exploration.

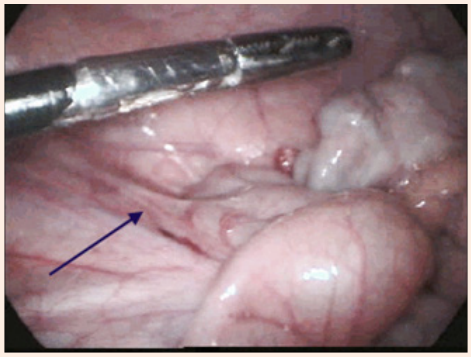

Figure 3: Adhesions kinking the terminal ileum (arrow mark).

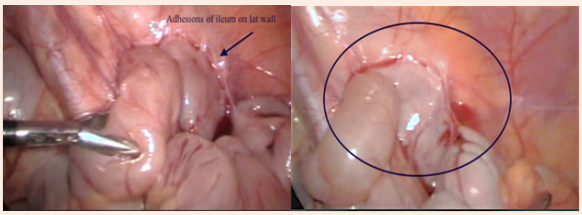

Figure 4a and b: Adhesions between the terminal ileum and lateral abdominal wall.

Adheseolysis has been done for each of these patients so as to release the ileum and avoid its kinking. Each of these patients was also subjected to an appendectomy unless contra-indicated.

Results

All the patients who were subjected to laparoscopic adheseolysis of the terminal ileum were pain free for more than 1 year. These included the 7 patients who were symptomatic even after having undergone laparoscopic appendectomy for RAP earlier by other surgeons.

Discussion

RAP is a common problem of childhood. Various studies place its incidence between 14-30% of the children [1,3,4]. Besides the repeated disruption of schooling, evidence suggests that RAP in childhood can lead to late onset functional bowel disorders including Irritable bowel syndrome [5,6].

Most of these patients undergo a variety of investigations including imaging procedures but the diagnostic yield to identify an organic cause for the pain has been put as low as 10% according to some studies [7,8]. In view of the persistence of symptoms and the significant disruption of schooling and development which such episodes of pain lead to, there are increasing recommendations of subjecting these children for a diagnostic laparoscopy [7-9]. Some studies have identified a variety of bands and adhesions in the cecal area which could possibly explain the symptoms. There is a suggestion that these adhesions could possibly be a result of previous milder/ undiagnosed attacks of appendicitis [8]. Similar adhesions have also been reported in adults [10].

Conclusions

Paracecal peritoneal folds have been differently described in anatomical literature. These folds could either be developmental as a manifestation of aberrations in the bowel rotation and fixation process or could be acquired (fibrotic – post inflammatory). They anchor the terminal ileum to the lateral abdominal wall and cause kinking of the terminal ileum. Some of them are known to lead to internal herniation and even intestinal obstruction. We feel that release of these peritoneal bands/ folds/ adhesions releases kinking of the terminal ileum and relieves intestinal spasms in a patient of RAP.

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