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INTESTINAL OBSTRUCTION IN ADULTS DUE TO CONGENITAL INTRAPERITONEAL BANDS

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ABSTRACT **Background:** Intestinal obstruction in adults, due to congenital intraperitoneal bands though rare are not uncommon. This article discusses the presentation, management of intestinal obstruction due to congenital bands in adults. It also looks into how these bands develop and why they lead to obstruction in adult phase.

Methods: Records of patients presenting from Jan 2013 to October 2019 with intestinal obstructions due to congenital bands were identified and analyzed.

Results: 92 patients presenting with intestinal obstruction were identified, of which 8 (8.5%) were due to intraperitoneal congenital bands. Abdominal pain and vomiting were the predominant presenting clinical features. preoperatively. All the patients were subjected to surgery (6 Laparoscopic, and 2 open). There was no morbidity or mortality.

Conclusion: Congenital intraperitoneal bands can cause obstruction in adults. Its confirmatory diagnosis preoperatively is difficult. Prompt intervention leads to a good outcome.

KEYWORDS : Congenital Intraperitoneal bands, Intestinal Obstruction, Adults)

INTRODUCTION:

The common cause of small bowel obstruction is postoperative adhesions [1,2]. The other causes include mechanical causes such as tuberculosis stricture, internal herniation, metastatic tumor, bowel wall tumor, intussusception, gallstone, and foreign body [3]. Congenital intraperitoneal bands causing intestinal obstruction in adults is very rare. The present study highlights the clinical profile of adult patients of intestinal obstruction due to congenital intraperitoneal bands, its management protocol. It also discusses as to how these bands manifest in adult phase.

METHODS:

This is a retrospective analysis of a prospectively maintained data of patients presenting with intestinal obstruction, form Jan 2013 to October 2019. Adult patients with congenital intraperitoneal bands as a cause, were identified and included in the study. Patients in pediatric age group were excluded from the study. Their profile, including demographics, clinical presentation, preoperative investigations, treatment administered, time duration of treatment administered from presentation, intraoperative findings and outcome.

A congenital intraperitoneal band was defined as intraperitoneal band considered to be of congenital or de novo origin with no history of previous laparotomy, peritonitis, inflammatory diseases, and presence of embryogenic remnants.

Statistical analyses were performed using SPSS Statistics v23.

RESULTS:

A total number of 129 adult patients presented with Intestinal obstruction during the study period. Of these 8 patients (6.2%) (Table I) were identified to be due to congenital intraperitoneal bands (5 females; age range 18-44 years). Abdominal pain, vomiting and distension were the predominant presenting symptoms. All the eight patients presented within 2days of presenting complaints. All patients were subjected to Plain Xray abdomen and CECT Scan as part of investigative workup to determine the etiology of obstruction. Only in 50% of cases (4/8) a pre-operative diagnosis of congenital band could be made. All patients were given a conservative trial for a period of 24-48 hours. None of them responded, and all patients required surgical intervention. Intra-operative findings revealed band to be originating from duodenum in 2 cases, jejunum in 3 cases, terminal ileum in 2 cases. 1 patient had more than one inter-bowel loop band involving the sigmoid colon causing. The congenital bands lead to volvulus in 2 cases, 1 involving the terminal ileum and another involving sigmoid colon. All patients were accessed through minimal invasive approach, however in two patients (with volvulus) required conversion to laparotomy. Rest six were managed successfully with minimal invasive approach, with excision of band and relieving of intestinal obstruction. Of the two patients converted to open one was subjected to Right Hemicolectomy (Volvulus of terminal ileum) and second patient underwent sigmoid colectomy (Volvulus of sigmoid colon). There was no morbidity or mortality with follow up period ranging from 14-60 months.

TABLE-I

PT	AGE	SEX	PRESENTING COMPLAINTS	Duration of symptoms	IMAGING	PRE-OP CONFIRMATION OF DIAGNOSIS	TIME INTERVAL TO SURGERY	INTRA-OPERATIVE FINDING	PROCEDURE PERFORMED	F/U & OUTCOME
1	21	F	Abd pain with distension	1day	Xray abdomen standing CECT Scan	No	2 days	Band between terminal ileum & ileal mesentery	Lap Excision of band	60 months Good
2	27	F	Pain, Vomiting, and Distension	2 days	Xray abdomen standing CECT Scan	No	1 day	Band between proximal jejunum & root of mesentery	Lap Excision of band	54 months Good

3	19	M	Pain, Vomiting, and Distension	2 days	Xray abdomen standing CECT Scan	Yes	1 day	Band running across the 2nd part of duodenum form the right parities	Lap Excision of band	43 months Good
4	44	M	Pain, Distension and complete constipation	1 day	Xray abdomen standing CECT Scan	Yes	4 days	Volvulus across a band from Sigmoid to base of mesentery. Multiple interloop bands	Open access. Sigmoid colectomy with release of interloop bands	32 months Good
5	24	F	Pain, Vomiting, and Distension	2 days	Xray abdomen standing CECT Scan	No	2 days	Band between proximal jejunum & root of mesentery	Lap Excision of band	29 months Good
6	36	M	Pain and Vomiting	1 day	Xray abdomen standing CECT Scan	No	2 days	Band across the duodenum	Lap Excision of band	21 months Good
7	39	F	Pain, Distension and complete constipation	1day	Xray abdomen standing CECT Scan	Yes	4 days	Band across terminal ileum with volvulus of the bowel loop	Open Right Hemi colectomy	19 months Good
8	18	F	Pain & Vomiting	1 day	Xray abdomen standing CECT Scan	No	2 days	Band across the proximal jejunum	Lap Excision of band	14 months Good

DISCUSSION:

Congenital intraperitoneal bands though a common cause of intestinal obstruction in pediatric age group [4,5,6] is a rare cause in adults [7] with only few case reports in literature [8,9]. Touloukian first described presence of Congenital bands[10]. Though the exact incidence of congenital bands is not known, based on findings of autopsy report it varies from 3.3 to 28%[11,12]. Various theories have been proposed with regards to its aetiology in paediatric patients. These include embryologic basis of persistent or incomplete regression of the foetal vitelline circulation, theory of it being remnant of the ventral mesentery, a genetic defect impairing embryogenesis [13,14,15], intrauterine mesothelioma trauma [16] and an immunological basis [17,18].However in adults it is believed that congenital bands arise de novo, and not from any described embryonic structures. This explains why in adults they manifest late and not in paediatric age group. Besides this, it also explains the reason for its inconstant location of occurrence, varying from patient to patient. As per the available literature reports, it can arise from anti-mesentery of the terminal ileum to the mesoappendix [19], from the antimesenteric wall of the proximal jejunum to the ligament of Treitz [20], amongst other sites. Besides its occurrence at more than one site in the same patient too has been reported [21]. In our study we had two cases each of bands arising from duodenum and terminal ileum, and 3 cases from jejunum and one patient had multiple bands involving the length of sigmoid colon. Its inconstant anatomical location of occurrence, leads to varying clinical presentation including sigmoid volvulus and internal hernia [22,23].

An intestinal obstruction is caused by one of three mechanisms: compression of the bowel, partial volvulus, or entrapment of an intestinal loop between the band and mesentery. In our study, though we did not have any patient with internal herniation, we did have two patients with volvulus. Rest six patients had obstruction due to entrapment of bowel loop between the band.

Although laparotomy and band excision are the treatment of choice in patients with congenital band, successful results with laparoscopic excisions have also been reported [24]. In the present study 6 patients (75%) were managed successfully with minimal invasive-laparoscopic surgery.

CONCLUSION:

Intestinal obstruction in adults, due to congenital intraperitoneal bands is not uncommon. Its pre-operative diagnosis is difficult. Majority of cases can be managed through minimal invasive approach successfully with good outcome.

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