

Chylolymphatic Cysts in Children: A Rare Condition

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ABSTRACT

Objective: To find out the clinical findings, anatomical types and preferred operative treatment for paediatric chylolymphatic cysts.

Study Design: Prospective study

Place and Duration of Study: Department of Pediatric Surgery/General Surgery Bahawal Victoria Hospital, Bahawalpur and Department of Pediatric Surgery/General Surgery Unit-II, DHQ Teaching Hospital, Dera Ghazi Khan from 1st January 2018 to 31st December 2020

Methodology: Fifteen patients of either gender with age from 18 months to 8 years (96 months) enrolled. Clinical data of all the patients diagnosed as chylolymphatic cyst on exploration was recorded.

Results: There were 8 (53.3%) females and 7 (46.7%) males with mean age was 49.80±27.07 (months). Four patients (26.66%) presented with abdominal mass, 5 patients (33.33%) presented with abdominal pain, 1 patient (6.66%) with abdominal mass and pain while 5 patients (33.33%) presented with signs of intestinal obstruction. Three (20%) had cysts at multiple sites, i.e., mesentery of jejunum, ileum and mesentery of sigmoid colon, 5 (33.33%) patients had cysts in jejunal mesentery while 9 (53.33%) patients' cyst was found in ileal mesentery and 1 (6.66%) had cyst in mesentery of cecum. Fourteen underwent exploratory laparotomy and 1 was managed laparoscopically. Post-operative recovery in 14 patients was uneventful and 1 patient managed by open surgery underwent respiratory complications and later expired. No recurrence was noted during follow up period up to 6 months.

Conclusion: Surgical exploration and surgical excision and sometimes resection anastomosis of gut is mainstay of treatment with excellent results.

Key words: Paediatric mass abdomen, Mesenteric cysts, Chylolymphatic cyst, Paediatric surgery

INTRODUCTION

Mesenteric cyst was first described in 16th century. It is a rare entity of diverse etiology. It may present anywhere in the mesentery of gastrointestinal tract from duodenum to rectum but it most commonly in mesentery of small intestine. Cyst may extend from base of mesentery to retroperitoneum.¹ Incidence of mesenteric cyst is 1:140000 in general hospital admission and 1:20000 in pediatric hospital admission.² Chylolymphatic cyst is very rare in pediatric age group³ and hence information available in about its presentation and possible complications is scanty.

Chylolymphatic cyst is frequently observed in association with small intestine.^{4,5} The cyst is usually lined by thin layer of endothelium or mesothelium and the cavity is filled with chylous or lymphatic fluid. The mean age of children having chylolymphatic cyst is 4.9 years.⁶ The chylolymphatic cyst may be asymptomatic or may present as acute abdomen with intestinal obstruction. Usually these are asymptomatic, but they may generate symptoms due to direct compression on adjacent organs or by producing stretch on the mesentery by rapid growth. They may be infected or even can rupture, causing hemoperitoneum. Sometimes it mimics the aortic aneurysm. The pre-operative diagnosis of chylolymphatic cysts is very difficult as there exist no pathognomonic findings on examination and X-rays usually show no pathology.

Ultrasound, frequently used in the diagnosis of abdominal lump, can demonstrate a fluid-filled walled cystic structure in between the bowel loop and hence,

Ultrasonography is helpful in diagnosing chylolymphatic cyst, CT scan is very helpful in evaluating the resectability of the cyst and showing the involvement of adjacent organs. Operative findings and histopathology of specimen is required for confirmation.

Mainstay of treatment of chylolymphatic cyst is surgery. Surgical options include excision of cyst with or without resection of gut, simple drainage, marsupialization and sclerotherapy. Complete surgical excision is having excellent results. In adults, cysts are often easy to be enucleated between leaves of mesentery. However, in children gut resection is usually required. During surgery, findings of cystic teratoma, cystic lymphangioma, hydatid cysts and tuberculous lymph nodes may mimic the chylolymphatic mesenteric cysts. So, excision biopsy should be done for differentiating between cases

MATERIALS AND METHODS

This prospective study conducted in the Department of Pediatric Surgery/General Surgery, Victoria Hospital, Bahawalpur (8 years), and DHQ Teaching Hospital, Dera Ghazi Khan (2 years) from 1st July 2010 to 30th June 2020. For this study age upto 13 years was considered as pediatric age group. Data about age at presentation, gender, presenting symptoms, imaging techniques for diagnosis, operative findings i.e. site and numbers of cysts, operative technique and post-operative course, was collected and recorded (Figs. 1-2). All data was analyzed using SPSS version 20.



Fig: 1 Huge chylolymphatic cyst in Ileum



Fig: 2 Chylolymphatic cyst in jejunum (excised)

RESULTS

There were 8 (53.3%) females and 7 (46.7%) were males with mean age was 49.80±27.07 months (Table 1). Four patients (26.66%) presented with abdominal mass, 5 patients (33.33%) presented with abdominal pain, 1 patient (6.66%) presented with abdominal mass and pain while 5 patients (33.33%) presented with signs of intestinal obstruction. USG abdomen of all patients was done while in 6 patients CT scan abdomen and pelvis was also done for diagnosis (Table 2). Three patients (20%) had cysts at multiple sites i.e. mesentery of jejunum, ileum and mesentery of sigmoid colon; 5 (33.33%) patients had cysts in jejunal mesentery while in 9 (60%) patients' cyst was found in ileal mesentery and 1 (6.66%) had cyst in mesentery of cecum. Fourteen underwent exploratory laparotomy and 1 was managed laparoscopically (Table 3). Four (26.66%) patients out of 15 were managed by excision of cyst, while in 11 (73.4%) patients, surgical resection of gut along with cyst and end to end anastomosis was done. Mean hospital stay was 3.37±1.15 days. Post-operative recovery in 14 patients was uneventful and 1 underwent respiratory complications and later expired on first post-operative day. No recurrence was noted during follow up period till six months.

Table 1: Comparison of gender according to age

Age (years)	Gender		Total
	Male	Female	
1-5	5	6	11 (73.4%)
6-13	2	2	4 (26.6%)
Total	7 (46.7%)	8 (53.3%)	15 (100%)

Table 2: Mode of presentation and investigation

Variable	No.	%
Presentation		
Abdominal mass	4	26.7
Abdominal pain	5	33.4
Abdominal pain & mass	1	6.7
Intestinal obstruction	5	33.4
Investigation		
USG	15	100.0
CT Scan	6	40.0

Table 3: Site of lesion and operative procedure

Site	No.	Operative procedure	
		Laparotomy	Laparoscopy
Jejunum	5	5	-
Ileum	9	8	1
Large intestine	1	1	-

DISCUSSION

Mesenteric cyst was first described by Florentine an anatomist while performing autopsy of 8-year old boy in 1507. Later, Rokitansky published first accurate description of chylous cyst in 1842.⁷ Chylolymphatic cyst is extremely rare and very few cases have been reported in literature. It comprises only 7.3% to 9.5% of all abdominal cysts.⁸ Mesenteric cyst most commonly found in mesentery of small bowel and sigmoid colon.⁹⁻¹¹ One third of mesenteric cysts occur in childrens younger than 15 years and reported slightly more in males.¹² In our study all the patients were up to 8 years of age and more were females, 8 out of 15. In review of 162 cases of mesenteric cyst by Kurts et al¹³ they found that 60% were in mesentery of small bowel, 24% in mesentery of large bowel and 14.5% in retroperitoneum but in our study we found 88% in small bowel mesentery and 12% both in sigmoid and small bowel mesentery.

Clinical presentation varied, from asymptomatic to palpable abdominal mass, diffuse abdominal pain and in extreme cases acute abdomen with features of intestinal obstruction.¹⁴ In the present study 5 (33.33%) presented with acute abdomen, 4(26.66%) with palpable lump and 5 (33.33%) with abdominal pain and 1 (6.66%) presented with pain and lump abdomen. Radiological investigation is integral part of management of these lesions.¹⁵ USG is imaging procedure of choice and CT may contribute some additional information in the form of presence of fluid level with different echogenicity.

There is no role of medical management in mesenteric cysts. Surgical intervention is main treatment plan for chylolymphatic cyst. Different surgical approaches used are marsupialization, sclerotherapy, drainage/aspiration, enucleation and excision of cyst with or without gut resection.¹⁶ Due to high recurrence rate associated with marsupialization and drainage complete surgical excision should be attempted with excellent results.¹⁷

Literature also mentioned laparoscopic removal of mesenteric cyst.¹⁷ Tran et al¹⁷ also reviewed laparoscopic management of abdominal cysts in 47 children. Among 47 cases laparoscopic cyst excision was possible in 36 cases, laparoscopically assisted bowel resection en bloc with cyst in 8 cases and 3 cases required conversion to open surgery but in our study one out of 15 cases laparoscopic assisted cyst removal was done and in 14 cases exploratory laparotomy was done.

CONCLUSION

Although very rare, chylolymphatic cyst should always be kept in mind as one of the differential diagnosis of cystic mass of abdomen. Clinical presentation is not characteristic and pre-operative imaging although significant but not diagnostic. Surgical exploration and surgical excision is mainstay of treatment with an excellent result although resection of the involved gut is frequently required in pediatric patients.

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