ORIGINAL ARTICLE

Primary Omental Torsion in children; a case series with review of literature

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ABSTRACT

Background: Primary omental torsion (POT) is an uncommon entity which is usually incidentally diagnosed in patients being operated for other diagnoses. Mostly patients are diagnosed as acute appendicitis and the diagnosis of POT is made peroperatively.
Aim: To look for demographics, presentation and treatment in cases of POT.
Method: This was a retrospective study conducted at paediatric surgery departments of Mayo Hospital and Services Hospital, Lahore from august 2004 to august 2014. Details of all the patients including age, gender, duration of symptoms, presenting complaints, laboratory investigation, provisional diagnosis, operative findings and associated obesity were noted
Results: A total of 8 patients with diagnosis of POT were included in the study. Male to female ratio was found to be 3:1. Most common presenting complaint was pain right iliac fossa and all patients had preoperative diagnosis of acute appendicitis. In all the patients' diagnosis of POT was made peroperatively, so Appendicectomy and excision of omentum was done in all patients.
Conclusion: In conclusion, though nonspecific symptoms and sign of POT are there, it must be considered preoperatively as differential of pain RIF and peroperatively if appendix is normal in patient being operated for acute appendicitis
Keywords: Acute appendicitis, omentum, pain RIF, torsion

INTRODUCTION

Primary omental torsion (POT) is an uncommon cause of acute abdomen in children and it usually presents with features mimicking acute appendicitis[1]. Omental Torsion (OT) can be primary or secondary; Primary omental torsion being if there is no associated intra-abdominal pathology. Secondary omental torsion (SOT) is called so if OT is associated with intra-abdominal pathologies such as internal or external hernia, inflammation or any tumor[2]. The diagnosis of POT is usually intra-operative because of its nonspecific features. However preoperative diagnosis is possible if there is strong suspicion and adequate imaging is followed[3]. We preformed this study to look for presenting symptoms, investigations, provisional diagnosis and any other feature associated with the pathology like obesity in patients with POT.

PATIENTS &METHODS

This retrospective study was conducted at paediatric surgery department of Services hospital and Mayo hospital Lahore. Medical records of all the patients with diagnosis of POT from august 2004 to august 2014 were retrospectively analyzed after ethical committee approval. Details of all the patients including age, gender, duration of symptoms, presenting complaints, laboratory investigation, provisional diagnosis, operative findings and associated obesity were noted. Body Mass Index (BMI) of all the patients was calculated and obesity was defined if BMI was more than 25. All the results were filled in the proforma. Results were analyzed by descriptive statistics.

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RESULTS

A total of 8 patients with diagnosis of POT were included in this study. Of these 8 patients 6 were male & 2 were female. Age of the patients ranged from 2 years to 11 years with average age being 7.75 years. Duration of symptoms ranged from 1 day to 4 days with 4 of 8 patients (50%) having symptoms longer than 48 hours duration. Most common presenting complaint was pain Right iliac fossa (RIF) in 7 of 8 patients (n=7). Associated symptoms included anorexia and vomitting in 3 of 8 patients (37.5%). Most common imaging modality used was ultrasound (USG). However in none of the patients it provided specific diagnosis of POT. Total Leucocyte count (TLC) of all the patients was noted and leukocytosis (TLC>11000 /mm^3) was found in 4 of 8 patients (50%). In all patients provisional diagnosis of acute appendicitis was made which turned out to be POT preoperatively. In all patients appendix was normal along with omental torsion. Obesity was noted in 3 of 8 patients (n=3).

Fig. 1: Omental torsion in a patient (After permission from APSP J Case reports)

Fig. 2: Omental torsion in a patient

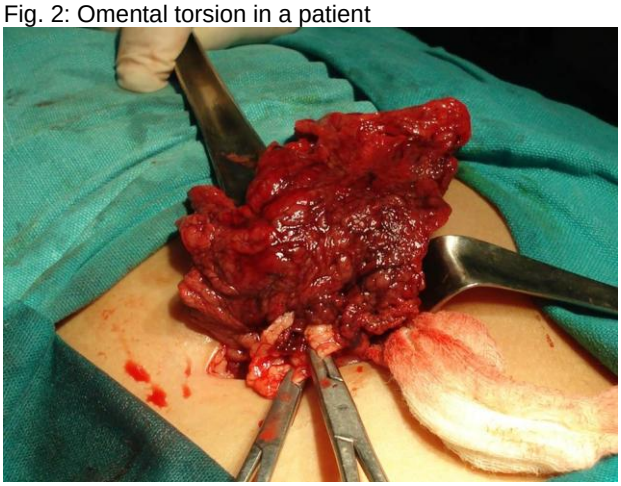

Table: Details of all the patients in our series

Patients	Duration of symptoms	Presenting complaint	Imaging	Lab. Tests	Provisional diagnosis	Operative findings	Associated comorbidities
6 yrs male	1Day	Pain RIF, nausea, anorexia	USG	TLC-15 x 10^3/µL	Appendicitis	Appendicitis negative OT +ve	Obesity
9 yrs female	4 Days	Pain RIF	USG	TLC-7 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	Obesity
10 yrs Male	4 Days	Pain RIF, Pain RHQ	USG	TLC-5.5 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	
2 yrs Female	2 Days	Pain RIF, fever, nausea	USG	TLC-10.3 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	
11 Yrs Male	3 Days	Pain RIF, fever	USG	TLC-8.6 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	
12 Yrs Male	1 Day	Pain right upper quadrant	USG	TLC-11.0 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	
7 Yrs Male	2 Days	Pain RIF	CT Scan	TLC-14.0 x 10^3/µL	Appendicitis	Appendicitis negative OT+ve	
5 yrs male	3 Days	Pain RIF, anorexia, vomiting	USG	TLC-8.0 x 10^3/µL	Appendicitis	Appendicitis negative OT +ve	Obesity

DISCUSSION

Omental torsion is a rare entity in which greater omentum is rotated along with its long axis. This entity was first reported by Eitel in 1899[4]. It is generally considered a disease of 4th and 5th decade of life & rarely is the cause of acute abdomen in children[6]. According to kimber et al, OT can be a finding in one out of 600 surgeries for appendicitis, when appendix was found to be normal[7].

In our study we found average age of presentation being 7.75years and in our series 6 of 8 patients were male with male: female being3:1.Similar findings were noted by Varques BT et al who found male: female in children being 4:1in total of 18 patients[8].

POT can present with a variety of symptoms but most common presenting complaint is pain abdomen. In our series we found pain abdomen as presenting complaint in all the patients. Other symptoms including vomiting and anorexia were present in 3 of 8 patients (37.5%); however fever was present in only 2 patients (25%). Varques BT et al also found similar finding in their review as pain abdomen in 78% of patients & fever, nausea or vomiting in 39% of patients[8].

Preoperative diagnosis of POT is very difficult and requires high level of suspicion.Preoperative investigations including ultrasound & CT- scan may be helpful. Ultrasound abdomen may show focal area of increased echogenicity. CT abdomen shows whirling mass of fatty and fibrous tissue around a pedicle[9]. In our study 7 of 8 patients had preoperative USG, which showed non-specific findings in all cases. Leukocytosis was seen in 4 of 8 patients (50%) in our series which s consistent with the previous literature findings.

Due to nonspecific nature of the symptoms & signs in POT, usually it is misdiagnosed usually as acute appendicitis and less likely cholecystitis,

diverticulitis and other causes of acute abdomen[10]. In our series all patients had preoperativelydiagnosis of acute appendicitis (100%). Goti et al reported simulation of POT as acute appendicitis in 66% of cases and cholecystitis in 22% of cases. Accurate preoperative diagnosis of POT is difficult and usually it is diagnosed peroperatively[11].

Donhauser and loke classified OT into primary and secondary. However it can also be classified as unipolar or bipolar. In unipolar OT proximal omentum remains fixed while distal part is free. In case of bipolar both proximal and distal parts are fixed. In our series all patients (100%)were having unipolar OT while none had bipolar type of OT. POT is always associated with unipolar type of OT[5].

The pathogenesis of POT is not completely established. Common predisposing factors include anomalies of greater omentum which include tongue like projection, accessory omentum and anomalous visceral blood supply. Marridis G and Colleagues found in their analysis that obesity is an important risk factor in case of OT assistant is present in 85% of patients[12]. However in our study BMI of all the patients was calculated and obesity was found in only 3 of 8 patients (37.5%).

As in most of the cases it is diagnosed peroperatively, omentectomy is the procedure of choice. Laparoscopy has recently gained popularity and if diagnosis is in doubt then it a better option than to proceed with laparotomy[13]. If abdomen is assessed through mcBurney/Lanze incision, then it is better to perform appendectomy at the same time to prevent future diagnostic problems[14]. If diagnosis of POT is made preoperatively and other pathologies can be ruled out confidently, then conservative management may be considered[15,16].

CONCLUSION

The clinical presentation of POT mimicks acute appendicitis in most of the cases. The diagnosis of POT is unlikely to be made preoperatively. In our study all of the patients were diagnosed as acute appendicitis preoperatively (100%) as compared to previous studies in which it was reported to be 78%. Similarly association of obesity with POT was 37.5% in our study compared to high incidence reported in previous studies.

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