ACUTE INTESTINAL OBSTRUCTION IN CHILDREN DUE TO ROUND WORMs.

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ABSTRACT

Objective: To know about the various presentations and management of acute intestinal obstruction due to worms in children.

Design: An observational study

Place and duration of study: This study was conducted at the saidu teaching hospital Swat, from Jan 2010 to December 2010.

Material and method: Total 118 children were included in the study. The necessary work up was carried out. 68 children (patients) were treated conservatively. 50 Patients were operated upon as there was no improvement with conservative treatment.

Result: 118 children were studied, 70 male 48 female (ratio of 1.4:1). Abdominal pain was the leading symptom in all patients. 108 patients (91%) presented with abdominal distention. Vomiting present in 88 patients (74%). History of worms pass per rectally or in vomits in 99 patients (84%). 73 patients (62%) presented with absolute constipation. 54 patients (45%) attend the OPD with pain in right iliac fossa. 03(2%) patients presented with jaundice. Low hemoglobin level was observed in 89(75%) patients, deranged LFTs in 03(2%), air fluid levels in 91 (77%) patients on abdominal X-Rays, abdominal ultrasound finding were suggestive of acute intestinal obstruction in 77(65%) patients. All patients were treated conservatively, by keeping nil per oral, nasogastric decompression, IV antibiotics, fluids, kleen enema per rectum. 68 patient (57%) improved with conservative treatment. While surgical intervention was carried out in 50 patients (43%). Mean hospital stay for conservatively treated patients were four days, while for surgically treated patients it ranged from 7-12 days. Morbidity were noticed in 7 operated patients (8.26%), 4 patients with paralytic ileus and 3 patients with wound infection. Three patients died among the surgically treated patients, mortality is 2.5% in our study.

Conclusion: Acute intestinal obstruction due to round worms, can be treated conservatively but if no response, then surgical intervention must be planned.

KEY WORDS: Acute intestinal obstruction, Round worms, surgical intervention.

INTRODUCTION

Round worms (Ascariasis) are common intestinal nematodes which affect about a quarter of the world population[1]. It is highly prevalent in tropical and sub-tropical areas[2]. The Ascariasis in children is also very common in Pakistan.

Serious complications may occur in children due to Ascariasis. Acute abdomen in the form of intestinal obstruction, appendicitis, intestinal perforation, cholangitis, cholecystitis and obstructive jaundice, are reported in literature to occur in many patients[3,4,5,6]. Intestinal obstruction occurs in about 2 per 1000 round worms infested children per annum[2].

We present a study about acute abdomen (acute obstruction) in children due to round worms infestation and its conservative and surgical management in Malakand division, Khyber pukhtoon khwa Pakistan.

The aims of our study are to know about the presentation, treatment, and outcome of acute intestinal obstruction in children due to round worms.

MATERIAL AND METHODS

This is an observational study conducted in surgical department of Saidu group of Teaching hospitals, a tertiary care hospital attached with Saidu Medical College Swat, from January 2010 to December 2010.

Total of 118 children were included in the study. Children below 2 years of age and above 15 years were excluded from the study. Those patients, having acute abdomen due to other causes were also excluded from the study.

Mode of admission of these patients was either through casualty or surgical OPD. In the ward detailed history, clinical examination and routine investigation were carried out.

Patients were closely monitored for vital parameters, abdominal distention, abdominal tenderness. Serial abdominal X-rays and abdominal ultrasonography were obtained. X-ray films were evaluated for air fluid levels and the diameter of the visible gut loops was recorded. These serial follow up radiographs were obtained on 1st, 2nd and 3rd days of admission.

Clinical progress, assessed by relative improvement in patient general condition, decrease in the abdominal pain, distention, vomiting and passage of flatus and or stool.

Radiological improvement was assessed by decrease in the number of air fluid levels and relative diameter of gut loops. These patients were initially treated conservatively by nil per oral, nasogastric aspiration, IV fluids, antibiotics, antispasmodics and Kleen enemas per rectum.

Those patients who either failed to improve or further deteriorated clinically and/or radiologically were submitted to surgical treatment.

Post-operative care and follow up visits were arranged

RESULTS

Total of 118 children included in the study. The sex distribution was 70 male and 48 female (ratio 1.45:1) (Table-1). The common ages of presentation were 5-10 years (Table-1).

Abdominal pain was present in all patients, Abdominal distention in 108 (91.5%), Vomiting in 88 patients (74.5%). 99 patients passed worms through anus (83.8%). 73 patients were absolutely constipated (61.8%), 54 patients suffered pain in right iliac fossa (45.7%), 47 patients passed worms through mouth (39.8%), 03 patients presented with jaundice (2.5%) [Table-2].

History of anthelminthic use was present in 101 patients (85.5 %) in recent past.Low hemoglobin level and raised eosinophil count, was observed in 89 patients (75.4%). Deranged liver functions tests (LFTs) were noted in 03 patients (2.5%).

X-rays showed bowel obstruction in 91 patients (77.1%), abdominal sonographic findings were suggestive of obstruction in 77 patients (65.2%). 31 patients presented with incomplete intestinal obstruction (26.2%), 03 patients presented with obstructive jaundice (2.5%) [Table-2].

Out of 118 patients, 68 (57.2%) improved with conservative management, nil per oral, nasogastric suction, IV fluids, antibiotics, antispasmodics, and kleen enema per rectum. 50 patients (42.3%) required surgical intervention. The various operative procedures performed were,

(1) Milking of worms to colon,
(2) Appendicectomy and worms' removal through the appendicular stump in 25 patients (21.1%).
(3) In 17 patients (14.4%) milking and enterotomy for removal of worms were carried out.
(4) While 04 Patients (3.3%) needed resection and anastamosis.
(5) Ileostomy was fashioned in 02 patients (1.6%)

(6) CBD exploration carried out for worms' removal in two jaundiced patients (1.6%) [Table-3].

Mean hospital stay for conservatively treated patients was four days.
The stay of surgically treated patients, ranged from 7-12 days.

7 operated patients (8.26) developed complications.4 patients presented with paralytic ileus. They were treated by nasogastric suction, IV fluids, electrolytes balance.3 patients developed wound infection. They were treated by antiseptic dressing, and iv antibiotics.

03 patients died postoperatively, hence mortality rate is (2.5%), 02 patients in resection and anastomosis (1.6%) and 01 in CBD exploration (0.8%).

Table No: 1, showing age and sex distribution

Age	Male	Female
2-5	14	12
6-10	41	25
11-15	15	11

Table No: 2 showing clinical features.

Sign and symptoms	Total	Male	Female
Pain abdomen	118(100%)	70(59.3%)	48(40.6%)
Abdominal distention	108(91.5%)	68(62.9%)	40(37.03%)
Vomiting	88(74.5%)	52(59%)	36(40.9%)
History of Worm passed Per rectum	99(83.8%)	63(63.6%)	36(36.3%)
Constipation	73(61.8%)	44(60.2%)	29(39.7%)
Worms passed per mouth	47(39.8%)	31(65.9%)	16(34%)
Jaundice	03 (2.5%)	03(100%)	----------

TABLE No: 03 showing operative procedures performed.

Operative procedure	Total	Male	Female
Milking of worms to colon, Appendicectomy, removal Of worms through appendicular Stump	25(21.1%)	16(64%)	09(36%)
Milking of worms to colon, enterotomy and removal Of worms	17(14.4%)	11(64.7%)	06(35.2%)
Resection and anastomosis	04(3.3%)	03(75%)	01(25%)
Ileostomy	02(1.6%)	02(100%)	-----
C.B.D exploration	02(1.6%)	02(100%)	-----

DISCUSSION:

In our country Ascariasis is very common condition affecting mainly children, particularly in rural areas, belonging to low socioeconomic, illiterate population. This condition presents in the form of growth retardation, malnutrition, anemia, and sometimes causes surgical emergency like acute abdomen in the form of acute intestinal obstruction, appendicitis, obstructive jaundice, cholangitis, cholecystitis and even acute pancreatitis. We studied 118 patients, 70 male and 48 female (Ratio 1.4:1). This is comparable with the study of V.D. upadhyaya and colleague,[2] and N. surendran and M.O.paulose and colleague.[4] Both of them mentioned more males than females in their study. So more males affected than females by Ascariasis in literature.[7]

In our study the mean age of the children was from 5 to 10 years. Similar age groups were studied by Mywani and colleagues [8, 9] and others authors [2]. This shows that this age group is mainly infested by the worms, because schooling, indoor and outdoor playing starts in this age group.

The clinical features depend on the time of arrival to hospital, age of patients, as well as the load of worms infestation. Majority of them present with pallor and signs of malnutrition. Most of our patients present with abdominal pain and distension 91.5%. A.mohta and colleagues reported 83%, and P.K.mishra et all noted in 93.2% [8,10,25,26]

Vomiting and absolute constipation were present in 74.5% & 61.8% patients respectively. A.mohta et all mentioned in 63%, and F.M.sonai and colleagues also mentioned similar observation [8,18].

Passage of worms per rectum and mouth in our study were in 83.8%, 39.8% respectively. V.D.upadhyaya reported in 60%, and 49.2% patients, Bahu et all in 71.4% and 42.8%, while Muhammad talat mahmood also mentioned similar presentation [2,10,11,23]. Round worms sometime cause obstruction of CBD which may lead to jaundice, cholangitis, cholecystis and even pancreatitis etc.

We noted jaundice in 2.5% patients. M.Wani and colleagues described jaundice in 198 out of 1800 patients, while A.A.baba et all mentioned in 11.4% patients [9,22].

Anthelminthic was used by most patients .This is very important to mention here that these medicine is very useful but during acute attack it aggravate the obstruction of gut by killing the worms and making a bolus, leading to acute obstruction.

85.5% of our patients used anthelminthic. Some had taken it a few days before the admission and some many weeks ago. In literature it is mentioned that during acute attack of disease avoid these medicines and use it after treatment of acute problem. We used it after one week in conservatively treated patients, and 2,3 weeks in surgically treated patients [2,7,12].

Most of these patients suffer from anemia and malnutrition.

In our study 75.4% patients presented with low hemoglobin and raised eosinophilic count. Such picture is also stated by Ahmad khan and colleagues in his study [2,5,8].

In our study X-rays abdomen erects of 77.1% patients were showing multiple air fluid levels, dilated loops of gut. In some patients there were whirlpools, shadows of intra luminal worms. A.mohta et al, Ibrahim yetni et all, M.D.john sasaki, have mentioned similar X-ray finding in their study [8,13,14,15,16,27].

X-ray abdomen erect is very important and helpful tool in diagnosis of intestinal obstruction.

Ultra sonography is non-invasive, cheap, easily available and reliable tool of diagnosis in GIT pathology. We find in our study that 65.2% patients were diagnosed by abdomino pelvic ultrasonography. The findings were linear echogenic shadows and Bull eye and railway track sign, and in one case double tube sign.

Mohammad talat mahmood et all, Myawani and colleagues as well as A.A.Baba and colleague also mentioned the same ultrasonographic findings in acute abdomen due to round worms especially in hepatobillary ascariasis [9,10,17,20,22,23].

We treated 68 (57.6%) patients conservatively by keeping them nil by mouth, Nasogastric suction, Intra venous fluids, antibiotics, antispasmodics and kleen enema per rectum. P.P. Wasadkar, A.B. Kulkimi treated 73.9% patients conservatively, While A.Mohta et all mentioned 64.8% patients in his study. The less numbers of patients treated conservatively in our study was due to delayed arrival to hospital, which in turn is due to poor socio economic conditions, far flung hilly areas and poor law and order situation in this district of Khyber Pukhtoon khwa [4,7,8,12,14,18].

50 patients (42.3%) out of 118 underwent surgery due to no response to conservative treatment. The various procedures performed were milking of worms to colon, Appendicectomy and worms extractions through the appendicular stump, enterotomy, resection, and end to end anastamosis, Ileostomy, CBD exploration.

The increase number of patients for surgical treatment is due to delayed arrival to hospital, the reasons been already mentioned earlier and another factor involved, is the treatment of these patients by untrained, non-qualified people in the

periphery. These people also have strong belief in spiritual treatment by the religious persons like imam, mulla and pir etc.

In the study of N.Surrendar and M.O Poulos the surgical involvement was in 15.4%, while in the study of V.D.upadhyaya and colleagues 8%, in the study of A.mohta it was 35.1% and in the study of Enrique villamzar the surgical intervention was in 26.5%. The various operative procedures are also comparable with our study[2,4,8,19,24,25].

In our study, the mean hospital stay for conservatively treated patients ranged from 3 to 8 days, while for surgically treated patients it was 7 to 10 days.

P.P.Wasadikar and colleagues described 4-7days, and V.D.upadhyaya et all described the mean hospital stay 4.3 days for conservatively treated patients and for surgically treated the mean hospital stay was 12.4 days[2,7].

We noticed morbidity in 7 operated patients (8.2%). 4 patients presented with paralytic ileus, due to fluids and electrolytes imbalance, and 3 patients developed wound infection. similar finding also reported in literature [7,11,20].

Globally 150000 children die each year from intestinal obstruction due to worms [21].

There was no mortality in conservatively treated patients in our study while mortality of 2.5% occurred in surgically treated patients, two in resection and anastamosis and one in CBD explored patients.

In the study of N.Surendran and M.O.poulose, the mortality is 18.1%, in the study of B.Mukapadhyay et all it was 4.8% [4,12,22,23].

CONCLUSION

Acute intestinal obstruction duo to round worms is a common surgical emergency, timely planned decision for surgical exploration is mandatory for better outcome.

RECOMMENDATIONS

Keeping in view this study, it is the responsibility of every clinician that he must advise anthelmintic treatment to children and keep the possibility of worms as a cause of acute abdomen in children. Moreover public education is necessary, regarding the consequences of Ascariasis in their children.

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