CONSERVATIVE TREATMENT OF SMALL BOWEL OBSTRUCTION CAUSED BY ROUND WORMS IN CHILDREN BY USING KLEEN ENEMA

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ABSTRACT

Objectives: To determine the effectiveness of kleen enema in relieving intestinal obstruction caused by ascaris lumbricoides in children.

Material and Methods: This retrospective study was performed in Pediatric Surgery Department of Khyber Teaching Hospital from October 2011 to September 2013. A total number of 33 patients were admitted. Patients were treated with intravenous fluids, intravenous antibiotics, nasogastric suction and with kleen enema, given per rectally. Those patients in which obstruction was not relieved within 72 hours, were then operated.

Results: In 28 patients (84.8%) out of 33 intestinal obstruction was relieved by using kleen enema. 5 patients (15%) required laprotomy. Out of 33 patients 19 (57.57%) were males and 14 (42.4%) were females.

Conclusion: Kleen enema was very effective in relieving intestinal obstruction. The advantage of using kleen enema is its ready availability as compared to the other enemas used in such cases.

Key Words: Gastrointestinal Ascariasis, intestinal obstruction, kleen enema.


INTRODUCTION

Ascariasis is a helmenthic infestation and according to WHO committee on helmenthic infestation, one out of every four of the world population is infected. Poor hygiene and low socioeconomic conditions have been the main factors incriminated. Ascariasis occurs at any age but is most frequent between the age of 2 and 10 years. Above the age of 15 years its prevalence decreases1,2. Although the helmenthic infestation can present with silent form or chronic symptomatology, the massive infestation in children can give rise to serious complications, like small intestinal obstruction3,4, bile duct, pancreatic duct, and appendiceal lumen obstruction5, volvulus of small bowel6, intussusceptions7, peritonitis due to perforation of intestine8, liver abscess and pulmonary abscess9,10. Every 2 out of 1000 children who harbor round worms in their small bowel develop intestinal obstruction per year.

Conservative management for intestinal worm obstruction is advocated in many studies11,12,13 and can be done with nasogastric suction, intravenous fluid administration, normal saline enema12, hypertonic saline enemas12 and instillation of oral piperazine salt5. In few studies gastrografin14,15 was used for removal of ascaris lumbricoides with variable results. All these methods were used in incomplete small bowel obstruction only but we preferred kleen enema for the first time in our study because of its ready availability in both complete and incomplete small bowel obstruction with very good results.

MATERIAL AND METHODS

This retrospective study was conducted at Pediatric Surgery unit of Khyber Teaching Hospital, Peshawar, Pakistan from September 2011 to October 2013. Total 33 patients (19 male and 14 female) with small bowel obstruction caused by Ascaris lumbricoides without any evidence of peritonitis were included in this study. Patients who had peritonitis at the time of presentation...
were excluded from this study. Detailed history, with special emphasis on any passage of worms in vomitus or through rectum was taken. All patients were initially treated conservatively by keeping them nil orally, passing a nasogastric tube for decompression, starting intravenous fluids and antibiotics. After getting the informed consent from the parents, patients were started with kleen enema per rectally, twice a day. The conservative treatment was abandoned if patient developed sign and symptoms of peritonitis or abdominal pain and distension did not improve after 72 hours of conservative treatment. These patients were monitored with measurement of girth of the abdomen and X-ray of the abdomen performed every 24 hours. X-ray erect abdomen performed at the time of admission was assessed for the number of air-fluid levels. X-ray erect abdomens were then repeated at 24, 48 and 72 hours. Decrease in the intensity of pain abdomen and abdominal distension, reduction in the girth of abdomen and passage of worms in stools were good indicators. If there was no improvement in the clinical condition of the patient within 72 hours of conservative treatment or clinical condition of the patient deteriorated then surgical treatment was considered.

RESULTS

Total 33 patients were included in the study. Out of which 19 (57.57%) were males and 14 (42.4%) were females (male to female ratio 1.35-1). Most of the patients (72.7%) presented between 4-9 years of age. The clinical features included abdominal pain in all 33 patients (100%), abdominal distension in 22 patients (66%), constipation in 17 patients (51%), vomiting in 20 patients (60.6%), passage of worms in vomitus, 15 patients (45%), passage of worms in stools, 17 patients (51%), abdominal mass in 7 patients (21%) and visible loops in 6 patients (18%). On abdominal examination the most common findings were abdominal distension (66%) and abdominal tenderness (60%) X-rays and ultrasound abdomen was performed in all patients, ultrasound was more sensitive in detecting Worms in intestine (75%).

Out of 33 patients only 5 required surgical intervention (15%) rest responded to conservative treatment. Conservative management consisted of nil per orally, naso-gastric tube aspiration, Intravenous fluids and antibiotics. Kleen enema was given twice per day. Antispasmods and anthelminthics were not used during the acute phase of intestinal obstruction. Antispasmods were given only in severe abdominal colic. Operative procedures included milking of worms into cecum (3 patients), enterotomy and removal of worms in two patients. Mean stay in the hospital for conservative treatment was 5.01 days (range 3-7 days). In cases who were operated mean hospital stay was 8.6 days (range 8-9 days), there was no mortality only one patient developed incisional hernia, which was repaired later on.

DISCUSSION

Intestinal obstruction due to round worms in children is more common because of small luminal
Conservative treatment of small bowel obstruction caused by round worms

5.01 days which is similar to the other studies like Soom

ment with kleen enema mean hospital stay duration was

In patients who responded to conservative treat

obstruction and making surgery more complex.

by round worms because of the risk of causing complete

avoided in patients with small bowel obstruction caused

especially those causing spastics paralysis, should be

hernia which was later on repaired. Paralyzing agents,

no mortality and only one patient developed incisional

stated in a ratio of 1.35:1. Other studies have shown the same

In order to reach a proper diagnosis history of

passage of worms through the rectum or through the

mouth is important 18 In our study the number of pa

patients who vomited worms were 15 patients (45%), and

patients who passed worms in stools were 17 in num

bers (51%), Villamizar et al15 reported that 50% of their

patients had history of passage of worms through mouth

or through anus. Diagnosis of small bowel obstruction

causd by ascaris lumbricoides is based on history and

is supported by X-ray abdomen and ultrasound of the

abdomen10,16.

Most patients (72.7%) in our study presented

between 4-9 years of age which is almost similar to

the results of N.E. Agugua et al24 who reported highest

incidence in children aged between 3-7 years (74%).

Most patients in our study had pain abdomen (100%)

and abdominal distension (60%) at the time of presen

presentation which is similar to many reported series20,22,23.

Male dominated in numbers over females in this study

in a ratio of 1.35:1. Other studies have shown the same

results24,25.

In patients who responded to conservative treat

ment with kleen enema mean hospital stay duration was

5.01 days which is similar to the other studies like Soom-

ro MA et al19 reported mean hospital stay of 4±1.69

days. In patients who were operated mean hospital

stay was 8.6 days (range 8-9 days). The treatment pro

posed in our study (nasogastric aspiration, intravenous

fluids and antibiotics and kleen enema) the response
to conservative therapy was good (pain decreases,

worms are passed through rectum and reduction in abdo

minal distention). If worms were not passed after

3 days of conservative treatment or patient deteriorated

clinically then surgical intervention was considered (only

5 children in this study). Those patients in which surgery

was performed, 3 were managed by milking of worms

into cecum, and in other 2 enterotomies and removal

of worms, was performed.

The exact mechanism of action of kleen enema in

relieving small bowel obstruction is not known but it is

postulated that it probably works by stimulating mass

movements in the colon. These mass movements also

increase small bowel motility leading to disentangle

ment of worms bolus and then their expulsion through

the anus.

CONCLUSION

Parital or complete small bowel obstruction with

out evidence of peritonitis can be treated effectively by

using naso gastric aspiration intravenous fluids, anti

biotics and kleen enemas which is safe, cost effective,

easily available and requires less hospital stay.

REFERENCES

1. Haswell- Elkins M, Elkins D, Anderson RM. The

influence of individual, social group and household

factors on the distribution of Ascaris lumbricoides

within a community and implications for control


2. Dold C. Holland CV. Ascaris and ascariasis. Microbes


3. Villamizar E, Mendez M, Bonilla E, Varon U, Onatara

S Ascaris lumbricoides infestation as a cause of

intestinal obstruction in Children experience with 87


4. Shiekh KA. Mechanical small bowel obstruction in

children at a tertiary care centre in Kashmir. African


5. Akgun Y Intestinal obstrucitojh caused by Ascaris


6. Kawatra V. Gangrene intestine caused by Ascaris

lumbricoides; report of 5 cases in children. Pathol


7. Wasadikar PP, Kulakarni AB Intestinal obstruction

8. Sarmast AH. Duodenal perforation with an unusual

presentation: a case report. Case Reports in Infect-

ious Diseases, 2011: 512607.
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AUTHOR’S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

Waheed T:  Idea & data collection.

Imran M:  Drafting of manuscript.

Akhtar W:  Bibliography.

Rehman I:  Supervised the Research.

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.