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Ascariasis and its complications in a tertiary care hospital in Northern India: A prospective study

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Abstract

Objective: To analyze the ascariasis and its complications presenting to our tertiary care hospital so as get an idea of need of the prophylactic measures and timely deworming.

Material and Methods: This prospective study was conducted over a period of 2 years in the unit two of department of surgery in SMHS (Shri Maharaja Hari Singh) hospital at Government Medical College Srinagar, Jammu and Kashmir, India, from September 2015 to August 2017.

Results: Among 192 patients with mean age of 23.56 years, majority were from rural areas. Majority (117) of the patients presented in the age group of 1-20 years and included 61 patients with intestinal ascariasis, 49 patients with features of intestinal obstruction and 7 patients with biliary ascariasis. Seventyfive patients presented with intestinal ascariasis alone, with 38 males and 37 females and mean age of 14.8 years. Fifty patients represented intestinal ascariasis with obstruction and included 27 males and 23 females with mean age of 10.2 years. Sixtyseven patients have pancreaticobiliary ascariasis, comprising 59 female and 8 male patients.

Conclusion: Ascariasis is very common in this part of the world and leads to many complications which may require surgical intervention in some cases. So it is necessary to educate people about this disease and its various modes of prevention. Anthelmintic drugs should be made available free of cost in hospitals and workplace. School children should be given anthelmintic medications enmass at regular intervals, especially in rural areas.

Keywords: Ascariasis, complications, intestinal obstruction, Biliary

Introduction

Ascaris lumbricoides, the largest nematode, is the causative agent of ascariasis [1]. It is the most common helminthic infection in the world and 33% of the world population is estimated to be infested with it [2]. Although infections are particularly common in developing countries where sanitation and hygiene is poor, ascariasis exhibits a cosmopolitan distribution, with cases also described in developed countries [3-5]. The adult round worm normally lives in the small intestine. Because they have wanderlust and tend to explore ducts and cavities [6], they can lead to complications like pancreatitis, cholangitis, cholecystitis. It is estimated that about 60 million of those infected are at risk of developing some form of morbid disease [7]. In India, high prevalence rates are found in Tamil Nadu (85%) [8] and Kashmir (70%) [9]. In Indian studies from Kashmir, at highly endemic area, ascariasis was found to be the cause in 36.7% cases of 109 patients with proven biliary and pancreatic disorders [10].

Background

Ascariasis is very common in northern India including the Kashmir valley [9]. Poor sanitation, scarcity of potable drinking water and low standard of personal hygiene contribute to rapid spread of these infections in this part of world. Being a centrally located tertiary hospital, SMHS hospital caters to the maximum population of Kashmir valley. Under this background, present study was conducted to look for various aspects of ascariasis in Kashmir.

Material and methods

This prospective study was conducted over a period of 2 years in the unit two of department of surgery in SMHS (Shri Maharaja Hari Singh) hospital at Government Medical College

Srinagar, Jammu and Kashmir, India, from September 2015 to August 2017. A total of 192 patients (109 females and 83 males) with ascariasis were studied during this period. The age of the patients ranged from 3 years to 81 years, all belonging to different parts of Kashmir valley. The patients admitted in the ward after being assessed in emergency or outpatient department were included in this study. The study included all the patients with surgical complications of ascariasis ranging from worm colic and intestinal obstruction to pancreaticobiliary complications like pancreatitis, cholangitis, cholecystitis. Clinical assessment was performed in all the cases. History regarding passage of worms in the stool or vomitus and recurrent abdominal pain, with or without jaundice, was asked in each case. Complete blood cell count, liver function test, serum amylase, X-ray of the chest and abdomen and ultrasound of the abdomen was performed in all the patients at the time of admission and repeated when required. CECT abdomen pelvis was performed in some patients and endoscopy/ERCP was performed in few patients. The mainstay of the diagnosis was ultrasound of the abdomen.

Results

In this study, among 192 patients (table1) with mean age of 23.56 years, majority were from rural areas. Majority (117)

of the patients presented in the age group of 1-20 years and included 61 patients with intestinal ascariasis, 49 patients with features of intestinal obstruction and 7 patients with biliary ascariasis. Thirtythree patients presented in age group of 20-40 years out of which 8 had intestinal ascariasis only, 1 had intestinal obstruction and 24 had biliary ascariasis. Twenty six patients presented in the age group of 40-60 years with 4 having intestinal ascariasis and 22 had biliary ascariasis. 15 patients presented in the age group of 60-80 years with 2 having intestinal ascariasis and 13 having biliary ascariasis. Only one patient presented in the age group >80 years and had biliary ascariasis.

Seventy five patients presented with intestinal ascariasis alone, with 38 males and 37 females and mean age of 14.8 years. Fifty patients represented intestinal ascariasis with obstruction (figure 1 to 2) and included 27 males and 23 females with mean age of 10.2 years. Sixty seven patients have pancreaticobiliary ascariasis (fig 3), comprising 59 female and 8 male patients. In the pancreaticobiliary group, 65 had biliary ascariasis, and 2 had MPD (main pancreatic duct) worm. In this group 15 patients had worm induced pancreatitis.

Most of the patients were managed conservatively while some patients with intestinal obstruction required surgical intervention.

Table 1: Distribution of patients

Age Group (Years)	Total Patients	Intestinal Ascariasis	Intestinal Obstruction	Pancreaticobiliary Ascariasis
1-20	117	61	49	7
20-40	33	8	1	24
40-60	26	4	0	22
60-80	15	2	0	13
>81	1	0	0	1



Fig 1(a): Worm boluses visible



Fig 1(b): Worm obstruction (X-ray picture)



Fig 2: Enterotomy with Worm Bolus retrieval



Fig 3: USG picture showing worm in Gall Bladder

Discussion

Ascariasis is a common entity in this part of the world. This study was carried out at the SMHS (tertiary care) hospital which catered to most of the population of this region, to assess the clinical presentation and the management of ascariasis and to get a rough idea of the magnitude of the problem in Kashmir valley. Around 192 cases presented to our unit over a period of 2 years which suggest that the disease is common in this region. Patients admitted with intestinal ascariasis presented with colicky abdominal pain with or without vomiting, while patients with intestinal obstruction presented with colicky abdominal pain, recurrent vomiting and abdominal distension. Patients with biliary ascariasis presented with recurrent abdominal pain, with or without jaundice while those with pancreatitis had severe upper abdominal pain not relieved by antispasmodics and analgesics easily, sometimes associated with vomiting. The disease was more frequent in 1st to 2nd decade of life with mean age of 23.56 years. The patients were evaluated with the help of investigations like CBC, LFT, X-ray abdomen, USG Abdomen, and CECT abdomen and pelvis, and in few patients endoscopy/ERCP. USG abdomen was the most commonly used investigation which was able to detect the worms as splacular, linear or tangled echogenic structures. Ultrasonography is a highly sensitive and specific in visualizing a worm in the biliary system, as well as monitoring its mobility to and from the ducts over time [11]. X-ray abdomen revealed multiple air fluid levels in obstruction. CT Scan was helpful in diagnosing pancreatitis and location of worms in biliary tract. Computed tomography (CT) will reveal the worms as cylindrical structures [12].

Seventyfive patients had intestinal ascariasis alone without obstruction, with 38 being male and 37 being female, with a mean age of 14.8 years. All these patients were managed conservatively with restriction of orals, antispasmodics followed by antihelminthic medications. Fifty patients presented with worm obstruction, with 27 being males and 23 females, with mean age of 10.2 years. Thirty-three patients were managed successfully with a conservative regime of nil per oral, ryles tube suction, iv (intravenous) fluids, iv antibiotics and proctolysis enemas, and 17

required surgical intervention, out of which 10 underwent enterotomy, 4 needed only kneading of worm bolus, and 3 underwent resection and anastomosis of gangrenous segment. In the pancreaticobiliary group which comprised 67 patients with female predominance (7:1 with 59 female and 8 male patients), with a mean age of 40.7 years, 61 were managed conservatively and 6 required ERCP because of failure of conservative management, but worm could be retrieved in only 5 patients. Female predominance in case of pancreaticobiliary group was also seen in other studies [13]. All the patients were given deworming drugs in the hospital and advised to take antihelminthic medication every 3 months.

Conclusion

Ascariasis is very common in this part of the world and leads to many complications which may require surgical intervention in some cases. So it is necessary to educate people about this disease and its various modes of prevention. Education through media, medical camps, and health programmes with special emphasis on deworming at regular intervals is the need of the hour. Antihelminthic drugs should be made available free of cost in hospitals and workplace. School children should be given anthelmintic medications enmass at regular intervals, especially in rural areas. This should be made compulsory by Government authorities as a part of national programmes like vaccination protocols. Heads of the local bodies like religious body heads should be involved in educating about deworming and adopting mass deworming protocols.

In simple words, complications and costs suffered due to ascariasis is avoidable by good hygiene and timely consuming cheaper anthelmintic drugs.

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