PRESENTATION OF BILIARY ASCARIASIS : A STUDY OF 30 CASES

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Introduction

Ascaris Lumbricoides, the round worm is one of the commonest and most widespread human parasites. It has been estimated that more than one billion people are infected and that it causes around 6000 death per annum [1]. In Asia it was estimated to affect more than 488 million people, in Europe 45 million, in Africa 49 million and in North America 3 million. Thus, possibly one out of every four people in the world's population is infected[2]. The incidence of Ascariasis varies widely from region to region including region within Asia. It is low in central Asian Republics where high temperature and widespread desert areas are unfavorable to the transmission of helminthes but in humid areas infection may be very common. In Africa infection rates up to 95% of the population have been reported[2].

Intestinal Ascariasis is very common condition in our country although there is no population based representative data. It thrives under condition of poor sanitation, where warm, humid soil facilitates embryonation of the eggs in the environment[3]. Bangladesh is one of the under developed country of the world lying in subtropical zone. The literacy rate here is very low, so also is the knowledge of sanitation and awareness of the disease and in addition living standard of majority of the people are also low. The vast majority of the people living in rural areas depend on agriculture as a mean for earning, where faeces are used as agricultural fertilizer, occupation presents a very important problem in Ascariasis[2]. Because of overcrowding in town of non industrialized country where planning has been unable to keep up with the population increase, the prevalence of infection may be higher in urban than in rural areas[3].

Infestation with Ascaris Lumbricoides is endemic and prevalent in Asia, Africa and South America. Intestinal Ascariasis is also very common condition in our country.

Bangladesh is one of the underdeveloped countries of the world lying in subtropics zone. The standard of living of the majority of the people of Bangladesh is low in addition.

The knowledge of sanitation and awareness of disease and consequences of the disease are minimum. A lion share of the people living in the villages depends on agriculture as mean of earning. In addition, environmental factors and lack of basic sanitation favour the growth of parasites mainly Ascaris Lumbricoides all over the country.

The mature worm inhabitants in the gastrointestinal tract commonly causes abdominal discomfort or colic and may be vomited or passed per rectum. An entangled mass of worm, from a bolus may produce intestinal obstruction, appendicitis, perforation of pre-existing ulcer of stomach and duodenum[4]. In case of heavy infestation it contributes to malnutrition.

Migration of the worm into the biliary tree and pancreatic duct via Ampulla of Vater giving rise to upper abdominal colic, nausea, vomiting, pyogenic cholangitis, stone formation around the ova of dead adult worm, obstructive jaundice, ductal stricture of even liver abscess secondary to infection and obstruction of the bilary tree. Uncommonly acute pancreatitis may result from pancreatic duct obstruction by the round worm. Even cholangiocarcinoma may develop.

Biliary complication of round worm is common in Bangladesh as well as in China & India[5]. It is also found in certain parts of USA where immigration from southeast asia are more. But biliary complications of round worm are not well documented in Bangladesh some sporadic expect case reports.

Aim of the study

The aim of the study is to see the clinical profile of biliary ascariasis in our country.

Materials and Methods

A total of thirty (30) patients were included in this study depending on their ultrasonographic findings

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irrespective of their age, sex and occupation. The cases were collected from Dhaka Medical College Hospital, BSMMU and different private hospitals of Dhaka city from June 2004 to June 2005.

Ultrasonographic Appearance of Biliary Ascariasis

Following were the criteria set for diagnosis of Biliary Ascariasis ultrasonographically.[6]

- On longitudinal scan : Linear echogenic structures without acquastic shadowing.
- On transverse scan : A tube within a tube – " Target sign" or " Bull's eye Sign".
- Dilatation of biliary tree.
- When infestation is heavy, multiple worms may lie adjacent to each other within a distended bile duct, giving a spaghetti like appearance.
- During scan the live moving worm could be seen also.

Observations and Results

Sex distribution of the patients

Out of the first thirty (30) patients, eleven (11) were male and the rest nineteen (19) were female. So, about 37% of this patients were male and 63% were female.(Table - 1)

Table – I

Sex distribution of patients (n = 30)

Sex	No	Percentage(%)
Male	11	37
Female	19	63
Total	30	100

Age distribution of the patients

The age range of the patients included in this study was from 19 years to 70 years. Eighteen (18) patients were within the range of 20 – 40 years (60%), Eleven (11) patients were more than forty (40) years old (36.6%) and one (01) patient was less than twenty (20) years old (3.33%). (Table - II)

Table – II

Age distribution of the patients

Age group(years)	No	Percentage(%)
>40	11	36.66
20 - 40	18	60.00
<20	01	03.33
Total	30	100.00

Occupation of the patients

Among thirty (30) patients, eighteen (18) were housewife (60%) and seven (07) were small businessman (23.3%), three (03) were service holder (10%) and two (02) were day labourer (6.66%). Among this female out of 19 (nineteen) all but one (01) was housewife (95%). That one (01) was a school teacher (0.05%), (Table-III)

Table – III

Occupation of the patients (N=30)

Occupation	No	Percentage(%)
Housewife	18	60
Businessman	07	23.3
Service holder	03	10
Day laborers	02	6.66
Total	30	100.00

Table – IV

Occupation among the female patients (N=19)

Occupation	No	Percentage (%)
Housewife	18	95
Service	01	05
Total	19	100

Economic status of the patients

Out of thirty (30) patients, twenty (20) belong to lower middle class (66.6%) and rest ten (10) belong to lower economic class (33.3%).(Table - IV)

Table – V

Economic status of the patients (n=30)

Economic status	No	Percentage (%)
Lower middle class	20	66.66
Lower class	10	33.33
Total	30	100.00

Symptom of the patients

Main presenting symptoms were recorded in all patients. Recurrent upper abdominal pain was the main presenting symptom in all thirty (30) patients (100%). followed by vomiting in fourteen (14) patients (46.6%), fever in nine (09) patients (30%), jaundice in three (03) patients (10%).(Table - VI)

Table – VI
Symptoms of the patients (n=30)

Symptoms	No	Percentage (%)
Recurrent upper abdominal pain	30	100
Vomiting	14	46.6
Fever	09	30
Jaundice	03	10

Physical signs of the patients

There was no physical findings in nineteen (19) patients (63.3%), seven (07) patients showed fever (30.1%), four (04) showed jaundice (13.3%) and another four (04) showed upper abdominal tenderness (13.3). (Table - VII)

Table – VII
Physical signs of the patients (n=30)

Physical findings	No	Percentage (%)
No findings	19	63.3
Fever	09	30
Jaundice	04	13.3
Tender abdomen	04	13.3

Findings in stool routine examination

Out of thirty (30) patients, only two (02) patients showed ova of ascariasis Lumbricoides in their stool (6.66%) and in rest twenty eight (28) there was no such are (93.3%). (Table - VIII)

Table – VIII
Findings in stool routine examination (n=30)

Findings	No	Percentage (%)
Ova	02	6.66
Nil	28	93.3
Total	30	100.00

Total count of WBC

In total count of WBC, it was found elevated in six (06) patients (20%) and in rest twenty four (24) patients it was found within normal range (80%).(Table - IX)

Table – IX
Total count of WBC (n=30)

Findings	No	Percentage (%)
Elevated	06	20
Normal range	24	80
Total	30	100.00

Findings in GUIT endoscopy (Upper GIT endoscopy)

In endoscopic examination of upper Gastrointestinal tract (UGIT) five (05) patients showed presence of round worm in duodenum (16.6%) and in rest twenty five (25) patients there was no such findings (83.3%).(Table-XI)

Table – X
Findings in GUIT endoscopy (n=30)

Findings	No	Percentage (%)
Round worm	05	16.66
Normal	25	83.33
Total	30	100.00

Discussion:

In this study a total of thirty (30) Patients were included depending on their ultrasonographic findings. Out of these thirty (30) patients, 19 were female and 11 were male. So, female patients outnumbered the male. Similar observation was also found by others[4,7]. WHO expert committee also reported that in some countries where there is no sex difference in prevalence among children of school age the figures in adult female are significantly higher than in male which may be attributable to greater contamination in immediate vicinity of the house. In addition, poor literacy with poor hygienic senses, caring of the babies, cleaning of the excreta etc. may be the other factors responsible for higher prevalence among the female.

The age of the patients shown in this study was between 19 to 70 years, although it was more common between 20 – 40 years. Similar observation is seen by others,[7] but Hossain et al. revealed it to be more common among under age of 20 [4]. WHO expert committee also reported it to be more common in young age groups[2]. This is probably due to lack of natural and acquired resistance and differences in behavior and occupation. In this study, only the adult patients were selected as pediatric patients are not usually referred to gastroenterologists. So, this apparent discrepancy is not a real representation.

In this study the disease is found most commonly among housewife and low income group. Similar finding were observed by other also [4,7,8].

Pain in the upper abdomen was the invariable feature in this series which was also found in 80% cases by others [2,8-15]. In this series jaundice was found in 10% of the patients and fever was found in 30% cases. Similar prevalence of these findings was also found by others [1,7,12,13,14,15]. Others symptom were found

in variable percentages in different series. On laboratory examination ova of the worm was found in 6.66% patients and total WBC was elevated in 20% patients. Round worm was detected in UGIT endoscopy in 16.6% patients. These findings could not be compared with other studies. Other studies available did not report these findings.

Summary :

Ascariasis is common problem in our country.. Biliary ascariasis is also not uncommon in our country although there is no representative study in our population. A total of thirty (30) cases of ultrasonographically diagnosed biliary ascariasis were studied to see their clinical and some laboratory profiles. Out of these thirty (30) patients 19 (63%) were female and 11 (37%) were male with age ranging from 19 to 70 years, highest being between 20 – 40 years. Housewife (60%) and small businessman (23.3%) of lower middle class group (66.6%) was the most frequent group. None was from high income group. Upper abdominal severe pain was the invariable (100%) feature of presentation followed by vomiting (46.6%), fever (30%) and jaundice (10%). Majority of the patients (63.3%) revealed no physical findings. Fever, jaundice, upper abdominal tenderness were found in 30%, 13.3%, 13.3% respectively. Endoscopy of UGIT revealed round worm in 16.6% cases.

Conclusion:

With availability of better quality machines, development of excellent expertise among the specialists of concerned fields with increasing awareness among clinicians and radiologists about biliary ascariasis the more and more undiagnosed abdominal pain is now a day's attributable to biliary ascariasis. Now a days ultrasonography is a non-invasive, cheap, radiation hazard free, widely available means of diagnosing Biliary Ascariasis with accuracy comparable to other diagnostic modalities.

This study has got its limitation as only the cases which are diagnosed Ultrasonography to have biliary ascaria were selected. So, the cases which were missed in ultrasonography were not included in this study. So, further study including all cases of abdominal pain suspected to have biliary ascariasis but negative in ultrasonography should be conducted to have the accurate clinical picture of this illness.

References :

1. Mann C.V. Russell R.C.G., Williams Normans. Bailey's and Loves short Practice of Surgery. 22nd edition. London: ELBS, 1995: P 748.
2. WHO expert committee report controls on ascariasis, WHO technical report series 379, Geneva, World Health Organization. 1967. PP 1-50.
3. Chatterjee K. D. Parasitology. 12th edition, Calcutta: Z Sree Saraswaty press ltd, 2000: pp 182-186.
4. Hossain Altaf M.A., Chowdhury Noman MD, Alam Nazmul, Ahmed Sultan Uddin, Kundu Shyam Sundar, Ramiz Sarwar, et al. Role of Ultrasonography in the diagnosis of Biliary Ascariasis J. Dhaka Med Coll 2002, 11(2) : PP 101 – 103.
5. Samdani G., Alam S. Acute cholecystitis due to round worm. Bang Med J 1992;21: PP 114–116.
6. Rumack C.M. Diagnostic Ultrasound. Vol – 1. 3rd edition. Missouri: Elsevier Mosby, St. Louis. 2005: PP 183.
7. Day A.K. Thesis for Bindhumunki Gold Medal Award, Calcutta 1978: p-56.
8. Dey SK. Rahman M. Bhattacharjee PK. Biliary Ascariasis causing upper abdominal pain diagnosis by Ultrasonography. Bangladesh J Medicine. 1998:9:54-56.
9. Sherlock Sheila, Dooley James. Diseases of the liver and biliary system. 11th edition. London: Blackwell Science Ltd. 2002: PP 517, 603.
10. Pasanen, Partanen K, Pikkarainen P, Alhava E, Prinen A, Janatuinen E. Diagnostic accuracy of ultrasound, computed tomography, and endoscopic retrograde cholangiopancreatogra- phy in the detection of obstructive jaundice, Scand - J – Gastroenterol 1991, 26: PP 1157 – 1164.
11. Breyer B. Brugrera C.A, Gharbi H.A, Goldberg B.B, Tan F.E.H. Manual of Diagnostic ultrasound. 1st Edition. World health organization, Geneva; 195:pp72-73, 98.
12. Feddy CRRM: Lakshimkanta K. Ramakrissan K. Biliary Ascariasis. India J Medical Sscience. 1968.
13. Guru AA, Ashraf MM, Garyali RK. Biliary Ascariasis & its management. Ind. J Surg. 1978; 74: 445.
14. Rashid MA. Ascariasis in biliary system. Bangladesh Med. J. 1991; 20(1): 47 – 49. Rumack C.M. Diagnostic Ultrasound. Vol – 1. 3rd edition. Missouri: Elsevier Mosby, St. Louis. 2005: PP 183.
15. Sharfuzzaman A M S M, Rahman MM. Biliary Ascariasis : A case Study. The Orion Medical journal 2005;20: PP 229 – 231.