HOOKWORM FOUND IN ECTOPIC SITES OTHER THAN DUODENUM WHILE DOING UPPER GASTRO-INTESTINAL ENDOSCOPY

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ABSTRACT

Objective: A detailed study was done to know about hookworms found in ectopic sites other than duodenum while doing upper gastro-intestinal endoscopy. Methods: A study of 1137 patients who had undergone upper gastro-intestinal endoscopy for a period of four years and eight months from May 2009 to December 2013 was carried out. In each of these 1137 patients, the stomach, the first part of duodenum, second part of duodenum and the entire upper gastro-intestinal tract were carefully examined to find out the presence of hookworms. The results were found as given below. Results: Out of these 1137 patients, 18 patients were found to have hookworms in duodenum. But one patient was found to have hookworm in stomach instead of its usual site in duodenum. Another patient was found to have hookworms in the jejunal part of gastrojejunostomy stoma while doing upper gastro-intestinal endoscopy. Conclusion: Hence hookworms can also be found in ectopic sites other than duodenum like in stomach and in the jejunal part of gastrojejunostomy stoma while doing upper gastro-intestinal endoscopy.

KEYWORDS: hookworm infection, ectopic sites other than duodenum, upper gastro-intestinal endoscopy.

INTRODUCTION

There has been many reports of finding hookworms in duodenum while doing upper gastro-intestinal endoscopy. Hence a detailed study was done to to know about hookworms found in ectopic sites other than duodenum while doing upper gastro-intestinal endoscopy.

MATERIALS AND METHODS

This study was conducted in the department of general surgery, Aarupadai Veedu Medical College And Hospital, Puducherry. A study of 1137 patients who had undergone upper gastro-intestinal endoscopy for a period of four years and eight months from May 2009 to December 2013 was carried out. In each of these 1137 patients, the stomach, the first part of duodenum, second part of duodenum and the entire upper gastro-intestinal tract were carefully examined to find out the presence of hookworms. The results were found as given below.

RESULTS

1. Out of these 1137 patients, 18 patients were found to have hookworms in duodenum.
2. But one patient was found to have hookworm in stomach instead of its usual site in duodenum(Fig1).
3. Another patient was found to have hookworms in the jejunal part of gastrojejunostomy stoma (Fig2, 3) while doing upper gastro-intestinal endoscopy.

Figure 1: Endoscopy showing hookworm with its bent head like a hook in antrum of stomach.
Figure 2: Showing endoscopic image of multiple hookworms with bent head like a hook in the jejunal part of gastrojejunostomy stoma.

Figure 3: Showing the video endoscopic image of two S-shaped hookworms in the jejunal part of gastrojejunostomy stoma.

DISCUSSION

Hookworms measuring about ½ inch long occur commonly in the duodenum but can also occur rarely in the stomach of human beings. The finding of worms attached to human gastric mucosa is exceptional because of the hostile atmosphere due to gastric acid Ph. But there has been few reports of finding hookworms in stomach while doing upper gastrointestinal endoscopy.  

Hookworm is an elongated, unsegmented round worm belonging to the the Phylum Nematoda. When a round worm is found during upper gastrointestinal endoscopy, differential diagnosis can be achieved according to the morphology of the worm and by its size. Hookworm is about ½ inch long. Ascaris is a large roundworm (15-40cm in length) and inhabits the small intestine. Strongyloides stercoralis inhabits the mucosa of duodenum or upper jejunum and is pretty small (2-3 mm in length) and relatively rare. Hookworms usually reside in the upper portion of small intestine and is 0.8 to1.3cm in length. Hookworm has a characteristic bent head giving it a hook like appearance (Fig1,2,3). Hookworm is also S-shaped due to its bend at the head end (Fig3). Thus hookworm is identified by its bent head which looks like a hook and S-shaped appearance. Locomotion is by longitudinal muscles on one side contracting, while the other side expands, deforming the body into S-shaped curves (Fig 3). By all these features the round worm seen in Fig1, 2, 3 was identified as hookworm.

Hookworm is one of the most common parasites in the world. Hookworm is one of the most common nematode causing intestinal infestation in the world. Hookworms are important soil-transmitted helminths for humans around the world. About 740 million people are estimated to be infected by hookworms. Two species namely Ancylostoma duodenale (A. duodenale) and Necator americanus (N. americanus) are responsible for human infection. Hookworm infection represents an important public health problem in developing countries. Hookworm is transmitted by contact with soil contaminated with human feces; the most common mode of transmission is through feco-oral route. The eggs of hookworm pass in feces of infected individual. They develop in soil and the rhabditiform larvae hatch out. They further develop into filariform larvae which are infective. Skin penetration by filariform larvae results in a local pruritic, erythematous, papular rash known as “ground itch”. Larvae penetrate skin and enter bloodstream, then reach heart and enter lung capillaries and alveolar spaces. They crawl up the bronchial tree, enter the esophagus and descend down the gastrointestinal tract, where the larvae molt twice and develop to the adult stage. Each adult female hookworm can produce thousands of eggs daily and repeat the life cycle.

The most common site of localization of adult hookworm is the duodenum and jejunum. Finding adults in the stomach is a rarity. Usually, the diagnosis of intestinal parasites is made by the characteristic findings such as identification of characteristic oval shaped eggs on fecal examination and eosinophilia. However; the diagnosis may be missed due to the absence of eggs of the parasites in single stool specimen. The eosinophilia also may not be marked. Upper gastroscopy is a very important tool for the diagnosis of gastrointestinal problems, and there are some reports of parasitic diagnosis during routine upper gastrointestinal gastroscopy. The endoscopist must remember to closely examine the stomach and small bowel mucosa and be alert for unsuspected parasitic infestation.
CONCLUSION

1. Hence upper gastro-intestinal endoscopy is a very useful investigation to diagnose hookworm infection of duodenum and stomach and in other sites of upper gastro-intestinal tract like the jejunal part of gastrojejunostomy stoma.

2. Hence it is extremely important to carefully look for the presence of parasitic worms like hookworms in duodenum, stomach and in other sites of upper gastro-intestinal tract while doing upper gastro-intestinal endoscopy.

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REFERENCES


