

 <p>ISSN NO. 2320-5407</p>	<p>Journal Homepage: - www.journalijar.com</p> <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)</p> <p>Article DOI: 10.21474/IJAR01/1906 DOI URL: http://dx.doi.org/10.21474/IJAR01/1906</p>	 <p>INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR) ISSN 2320-5407</p> <p>Journal homepage: http://www.journalijar.com Journal DOI: 10.21474/IJAR01</p>
---	---	---

RESEARCH ARTICLE

HOOKWORM RELATED OBSCURE OVERT GASTROINTESTINAL BLEEDING DIAGNOSED BY CAPSULE ENDOSCOPY.

Jaswinder Singh Sodhi and Mushtaq Ahmed Khan.

Department of Gastroenterology, Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Srinagar, Kashmir, India, 190011

Manuscript Info

Manuscript History

Received: 12 August 2016

Final Accepted: 13 September 2016

Published: October 2016

Key words:-

Hookworm, capsule endoscopy and
obscure gastro intestinal bleed

Abstract

Obscure gastro intestinal bleeding (OGIB) is the common indication for capsule endoscopy (CE) and has played significant role in the location of small bowel lesions causing OGIB. Hookworm infestation most commonly causes iron deficiency anemia due to occult blood loss from the upper gut, however it may first time present as overt OGIB. In this case report we present 60 year old women with recurrent episodes of malena of obscure origin with severe anemia. Capsule endoscopy revealed multiple hookworms hanging from the wall of Jejunum ingesting blood with bleeding at the site of attachment. Patient was treated with tablet Albendazole. There was improvement in hemoglobin levels with no further bleeding episode.

Copy Right, IJAR, 2016,. All rights reserved.

Introduction:-

Obscure gastrointestinal bleeding (OGIB) is defined as occult or overt bleeding of unknown origin that persists or recurs after an initial negative endoscopic evaluation including upper GI endoscopy and colonoscopy. Diagnostic yield of CE in OGIB has been around 60-70 %.(Jensen DM et al, 2002). Hookworm infestation most commonly causes iron deficiency anemia due to occult blood loss from the upper gut and is mainly diagnosed by stool examination showing typical ova of hookworm. Hookworm infestation causing overt OGIB or massive GI bleed is seen in few case reports and series. In this case report we present 60 year old women with recurrent episodes of malena of obscure origin with severe anemia. Capsule endoscopy revealed bleeding related to hookworm infestation

Case report:-

A 52-year old post menopausal woman presented with recurrent upper gastrointestinal bleed in the form of malena over a period of three and a half months. She had symptoms of fatigue, weakness, palpitations and exertional breathlessness. There was no history of abdominal pain, loss of weight or appetite, ulcerogenic drug intake, jaundice, bleeding from any other site, rash, bloody diarrhea, oliguria, swelling of face or feet. Investigations revealed a hemoglobin 4.2 gm/dl, total leukocyte count 5001/cmm with differential leucocyte count: (Polymorphs 67%, lymphocytes 29%, eosinophils 2.4%), Platelets 3.5 lacs/cmm, Mean cell volume (MCV) 64 fl. Peripheral blood film revealed hypochromic microcytic cells with anisopoikilocytosis. Urea 42 mg/dl, Creatinine 0.9 mg/dl. Bilirubin 0.4 mg/dl, AST 10 IU/L, ALT 42 IU/L, ALP 112 IU/L, Albumin 3.4 gm/dl, Serum iron 40 µg/dL. Fecal occult blood test (FOBT) was positive. Upper gastrointestinal endoscopy and colonoscopy was normal. CT enterography did not reveal any mass lesion, wall thickness with enhancement or any vascular malformation. Capsule endoscopy (MiroCam Capsule Endoscopy, Intro Medic Co., Seoul, Korea) revealed multiple hookworms

Corresponding Author:- Jaswinder Singh Sodhi.

Address:- Department of Gastroenterology, Sher-i-Kashmir Institute of Medical Sciences (SKIMS), Srinagar, Kashmir, India, 190011.

hanging from the wall of Jejunum. Their heads were seen burrowing the Jejunal mucosa with bleeding at the site of attachment and ingestion of blood by the parasite (Figure 1). No other concomitant lesion was seen in small bowel. Stool examination revealed typical $40\ \mu\text{m} \times 60\ \mu\text{m}$ smooth, colorless and oval shaped eggs of hookworm. Patient was treated with tablet Albendazole 400 mg daily for three days. She received 4 units of B positive blood transfusions followed by oral iron supplementation. Her hemoglobin improved to 11 gm/dl at 6 weeks. There was no further bleeding episode.

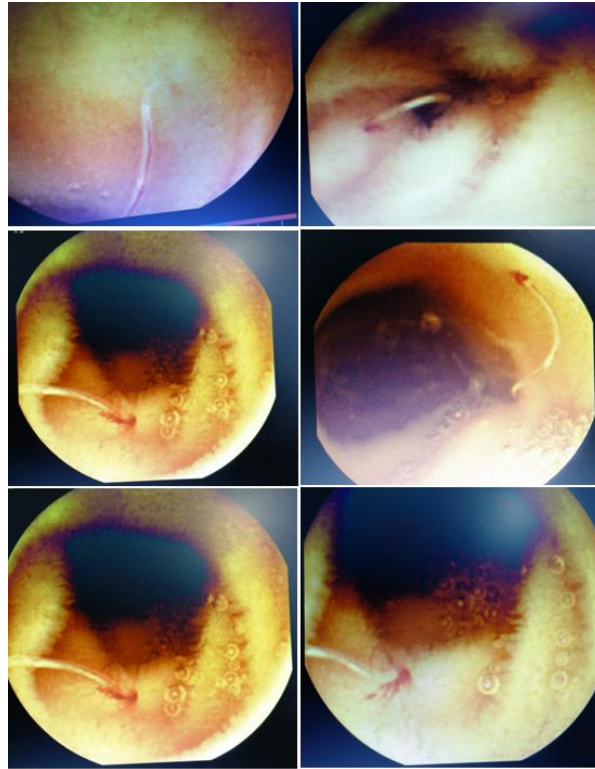


Figure 1:- Multiple views of capsule endoscopy showing hook-worms attached to wall of jejunum with bleeding at the site of attachment and ingestion of blood by the parasite.

Discussion:-

Hookworm infestation is seen in 740 million people worldwide. Hookworm infestation is caused by *Necator americanus* and *Ancylostoma duodenale*. *N. americanus* predominates in southern India whereas *A. duodenale* is more common in northern parts of the country. It is usually acquired by soil contaminated with human excreta. The majority of patients with heavy infection present as iron deficiency anemia due to occult blood loss from the upper gut. The diagnosis of hookworm infestation is mainly by stool examination showing $40\ \mu\text{m} \times 60\ \mu\text{m}$ oval eggs, but they appear in stools after 1 week of infection. Stool examination may be normal in 40% of patients with hookworm infestation.

This case report highlights parasites (hookworm) presenting as obscure overt GI bleed, especially in endemic zones. There are few case reports/series where CE has helped in picking hookworms as a cause of overt OGIB. (Dimitrios KC, 2010, Chen TH, 2006) Capsule endoscopy has advantage over stool examination as it can identify other causes of blood loss like inflammatory bowel disease, tumors, vascular malformations, ulcers related to non steroid anti-inflammatory drugs and tubercular ulcers. Hookworm infestation can cause occult as well as overt OGIB and may have other concomitant lesions. Those with additional lesions have recurrent bleeding more often than those with worm infestation alone. Ghoshal UC et al, (2011) analyzed the etiology of OGIB using CE and found twenty-one of 163 (13%) of patients having hookworm as the cause of OGIB. Of 21 patients, 16 had overt and 5 had occult OGIB. Additional lesion that could explain OGIB was present in 8/21 patients. Chalapathi Roa et al, (2012) reported a case of massive upper GI bleed due to hookworm which was diagnosed by CE. Massive gastrointestinal bleeding related to hookworm infestation is rarely seen in adults but it is more common in children. Acute heavy infestation

may present as gastrointestinal bleed in the form of melena. Each hookworm sucks about 0.1-0.4 ml of blood per day leading to blood loss of about 250 ml/day in cases of heavy infections. Gupta et al, (2006) reported one hookworm infestation on CE among 154 patients with OGIB. Hookworms cause mucosal hemorrhage by their buccal apparatus. The adult worm releases hyaluronidase and other anticoagulants which damages mucosa and walls of blood vessels causing blood extravasations. The negative pressure, by buccal apparatus allows the withdrawing of blood. (Stassens P, 1996).

We conclude from this report that Hookworm should be suspected as a cause of overt OGIB in endemic areas of hookworm infestation. Capsule endoscopy may help in finding these parasites besides excluding other causes of OGIB in endemic areas of hookworm infestation.

References:-

1. Jensen DM, Dulai G, Lousuebsakul V, Cave D, Bini E, Faroozi R, et al. Diagnostic yield of capsule endoscopy in patients with severe GI bleeding of obscure origin: subsequent recommendations, and outcomes. *Gastrointest Endosc* 2002; 55: AB-125.
2. Dimitrios KC, Dimitrios ES, Konstantinos HK, Georgios D, Epameinondas VT. Small bowel parasitosis as cause of obscure gastrointestinal bleeding diagnosed by capsule endoscopy. *World J Gastrointest Endosc*. 2010; 16; 2(11): 369–371.
3. Chen TH, Chen TY, Shyu LY, Lin CK, Lin CC. Hookworm infestation diagnosed by capsule endoscopy (with video) *GastrointestEndosc*.2006; 64:277–278.
4. Ghoshal UC, Lakshmi CP, Kumar S, et al. Capsule endoscopy for obscure gastrointestinal bleeding in the tropics: Report from India. *Dig.Endosc*, 2011; 23:17-23.
5. Chalapathi R, Aman S, Surinder SR, Amit Bhauwala, Surjeet Singh, Kartar Singh, Massive Obscure Overt Gastrointestinal Bleed: An Unusual Cause diagnosed by Capsule Endoscopy *Journal of Postgraduate Medicine, Education and Research* 2012;46(1):37-39
6. Gupta R, Lakhtakia S, Tandan M, Banerjee R, Ramchandani M, Anuradha S, *et al*. Capsule endoscopy in obscure gastrointestinal bleeding - An Indian experience. *Indian J Gastroenterol* 2006; 25:188-90. [↑](#)
7. Stassens P, Bergum PW, Gansemans Y, et al. Anticoagulant repertoire of the hookworm *Ancylostomacanthum*. *Proc Natl Acad Sci*; 1996;93:2149–2154