CASE REPORT

Enterobiasis-related inflammatory caecal polyp masquerading as a malignancy

Nada Elsaid,¹ Humza Mahmood,² Paris Tekkis,³ Emile Tan³

¹Chelsea and Westminster Hospital, London, UK

²St George's University of London, London, UK

³Department of Surgery and Cancer, Imperial College London, London, UK

Correspondence to

Dr Nada Elsaid,
nada_elsaid@hotmail.co.uk

SUMMARY

A 55-year-old Asian man was seen in the emergency department with bleeding per rectum. He was a teetotaler and had no previous abdominal surgery. He did, however, report a change in bowel habit towards constipation. He underwent colonoscopy which revealed a lesion, highly suspicious of malignancy, in the caecum. On review by two consultants, a decision to completely resect this lesion was made. Histological analysis of the polypoidal growth showed it to be a consequence of chronic infection with the helminth *Enterobius vermicularis*. Importantly, there was no evidence of dysplastic or malignant cells. The patient was subsequently discharged with a 3-day course of antihelminthic mebendazole and reassured that his per rectal bleeding was most likely due to haemorrhoids discovered at rectal examination.

BACKGROUND

We present here an unusual case of enterobiasis, the description of which has not been reported in the literature. Importantly, the finding was that of a caecal polyp, the physical appearance of which met the criteria for malignancy but whose aetiology was, in fact, inflammatory and infective.

CASE PRESENTATION

A 55-year-old man of Pakistani origin presented to the emergency department with intermittent blood loss per rectum. He denied any melaena or haematochezia; the bright coloured blood loss which he described was apparent only on tissue paper. In addition, he described a tendency towards constipation at and around the time of presentation.

The patient had no previous abdominal surgery and reported no further symptoms; in particular, there was no tenesmus, pruritus ani, dyschezia or constitutional symptoms. His medical history was significant only for paroxysmal atrial fibrillation and there was no family history of malignancy. Although he had resided in the UK for over 20 years, he had frequently made trips back to Pakistan, the most recent of which was 12 months from presentation. On further enquiry, the patient did remember passing a worm per rectum at the age of 15.

INVESTIGATIONS

A digital rectal examination revealed a single thrombosed haemorrhoid.

In order to investigate his presenting concern further, he underwent colonoscopy which revealed a pedunculated lesion that was suspicious of malignancy in the caecum, lateral to the ileocaecal valve,

but away from the appendiceal orifice (figure 1A). Magnifying narrow-band imaging (NBI) was then employed to confirm the pit pattern of the lesion, which revealed a type IV neoplastic polyp, as per classification of Kudo *et al.*¹ Subsequently, an endoscopic mucosal resection (EMR) polypectomy was performed using the hot snare technique and the polypectomy site was tattooed by injection into the submucosa (figure 1B).

Histological analysis of the polypoidal growth demonstrated a rather unexpected finding; the apparently malignant mass was, in fact, an inflammatory reaction to chronic infection with the

Figure 1 Colonoscopy images of (A) polyp with vascular mucosal pattern, superficial ulceration and contact bleeding and (B) following endoscopic mucosal resection polypectomy and clip application.

CrossMark

To cite: Elsaid N, Mahmood H, Tekkis P, *et al.* *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2013-201599

Figure 2 Histology slides of (A) whole-mount polyp, (B) *Enterobius vermicularis* (low power) and (C) *E vermicularis* (high power). H&E staining.

helminth *Enterobius vermicularis*. Importantly, there was no evidence of dysplastic or malignant cells (figure 2).

DIFFERENTIAL DIAGNOSIS

Generically speaking, colonic polyps have a number of aetiologies and are often classified into the following groups: hyperplastic, neoplastic, hamartomatous and inflammatory. Based on the appearance of the polyp at colonoscopy, an adenocarcinoma appeared most likely. However, included in the differentials were a lipoma, inflammatory pseudopolyp, gastrointestinal stromal tumour and neuroendocrine tumour.

TREATMENT

EMR polypectomy of caecal polyp and pharmacotherapy with the antihelminthic mebendazole.

OUTCOME AND FOLLOW-UP

In this instance, the finding of a caecal polyp at colonoscopy was purely incidental and unrelated to the patient's presentation. Indeed, it was concluded that the patient's haemorrhoids were the most likely cause of his per rectal bleeding. He was subsequently discharged with a 3-day course of antihelminthic mebendazole and reassured of the benign outcome of his investigations.

DISCUSSION

Enterobiasis is a common, innocuous, infection that most often follows a benign course in those afflicted. It is particularly prevalent among the paediatric population. The pinworm parasite is not zoonotic; humans are its only host. It is spread via the faeco-oral route and is acquired by inhalation or ingestion of the helminth ova. Infection with *E vermicularis* causes only mild symptomatology in the majority of cases. The principle symptom is that of pruritus ani, which is particularly symptomatic at night when the gravid female helminth migrates to the anus and deposits her ova perianally. The adult female helminth survives for around 6 weeks in the human gut so that most infections often resolve spontaneously. However, for this to occur, strict measures must be put in place to prevent reinfection. Indeed, the entire family should be treated with an antihelminthic, such as mebendazole and piperazine, and towels and bed sheets should be changed, which can otherwise act as a reservoir for infection. If left to become chronic, infection with the nematode *E vermicularis* may evoke an inflammatory reaction, resulting in polyp formation. Interestingly, while a review of the pertinent literature has shown this to occur in the sigmoid colon,² anal canal^{3–5} and various ectopic, extraintestinal

sites, including the liver⁶ and female genital tract,² this case report is the first to describe the caecum as a site for the occurrence of such a lesion. It is intriguing that this should be so, considering that the helminth *E vermicularis* favourably inhabits the caecum and contiguous portions of large bowel. Furthermore, while the patient described in this report was asymptomatic with the polyp, those described by other studies did report symptoms, such as pain and pruritus.^{3–4}

An emphasis should be made that the patient described in this report was wrongly suspected of having cancer. It is important to recognise that the various modalities used for diagnosis in medicine do not offer a definitive diagnosis in all cases. Findings should be interpreted judiciously, taking into account the sensitivity and specificity of the technique used. For instance, in this report, the technique of magnifying NBI with Kudo pit pattern classification was used in reaching a provisional diagnosis and this has been shown to have a specificity of 89%.^{7–8}

Learning points

- ▶ Enterobiasis-related inflammatory colonic polyps may masquerade as a malignancy. One should be aware of this when considering the differentials of a colonic mass.
- ▶ Surgical resection of the inflammatory polyp is essential to prevent further complications. This is also the gold standard investigation to establish a definitive diagnosis.
- ▶ All colonic lesions of a polypoid nature should be considered malignant until proven otherwise and treated by complete resection. This allows for histological confirmation of clinical suspicion and prevents future progression along the adenoma–carcinoma pathway.

Acknowledgements The authors would like to acknowledge histopathologist Nye-Thane Ngo for her efforts in providing the histopathology slides used in this report.

Contributors NE was involved in writing of the case report, collation of data from medical records and development of ideas in the article. HM was involved in history taking and obtained consent from the patient. PT was the supervising professor. ET was involved in correction of draft, collation of data and development of ideas in article.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

REFERENCES

- 1 Kudo S, Tamura S, Nakajima T, *et al.* Diagnosis of colorectal tumorous lesions by magnifying endoscopy. *Gastrointest Endosc* 1996;44:8–14.
- 2 Podgajski M, Kukura V, Duic Z, *et al.* Ascites, high CA-125 and chronic pelvic pain in an unusual clinical manifestation of Enterobius vermicularis ovarian and sigmoid colon granuloma. *Eur J Gynaecol Oncol* 2007;28:513–15.
- 3 Avolio L, Avoltini V, Ceffa F, *et al.* Perianal granuloma caused by Enterobius vermicularis: report of a new observation and review of the literature. *J Pediatr* 1998;132:1055–6.
- 4 Bharathi K, Anuradha S, Chandrasekar VA, *et al.* Enterobius vermicularis worm granuloma mimicking like a pseudo tumor in the anal canal: An unusual clinical presentation. *Trop Parasitol* 2012;2:124–6.
- 5 Vafai M, Mohit P. Granuloma of the anal canal due to Enterobius vermicularis. Report of a case. *Dis Colon Rectum* 1983;26:349–50.
- 6 Arkoulis N, Zerbini H, Simatos G, *et al.* Enterobius vermicularis (pinworm) infection of the liver mimicking malignancy: presentation of a new case and review of current literature. *Int J Surg Case Rep* 2012;3:6–9.
- 7 Shahid MW, Buchner AM, Heckman MG, *et al.* Diagnostic accuracy of probe-based confocal laser endomicroscopy and narrow band imaging for small colorectal polyps: a feasibility study. *Am J Gastroenterol* 2012;107:231–9.
- 8 East JE, Tan EK, Bergman JJ, *et al.* Meta-analysis: narrow band imaging for lesion characterization in the colon, oesophagus, duodenal ampulla and lung. *Aliment Pharmacol Ther* 2008;28:854–67.

Copyright 2014 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <http://group.bmj.com/group/rights-licensing/permissions>.
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- Submit as many cases as you like
- Enjoy fast sympathetic peer review and rapid publication of accepted articles
- Access all the published articles
- Re-use any of the published material for personal use and teaching without further permission

For information on Institutional Fellowships contact consortiasales@bmjgroup.com

Visit casereports.bmj.com for more articles like this and to become a Fellow