CASE REPORT

Iron deficiency anaemia in a coeliac: a cause for concern?

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SUMMARY

A 70-year-old woman with a 15-year history of coeliac disease was admitted for treatment and investigation of symptomatic anaemia. Of note, she was recently commenced on aspirin therapy for retinal artery occlusion. This followed a normal gastro-duodenoscopy, colonoscopy and CT abdomen as workup for iron deficiency anaemia. On this occasion, the patient was further investigated with small bowel capsule endoscopy. This revealed an ulcerated lesion in her proximal jejunum suspicious for malignancy, namely lymphoma. A biopsy of the lesion confirmed adenomatous changes and high-grade dysplasia without malignant changes. Given the endoscopic appearances of the lesion, she was further evaluated with a small bowel MRI. This revealed a 3 cm lesion with associated lymphadenopathy but no distant metastases. She proceeded to resection of her small bowel which confirmed an invasive adenocarcinoma of her proximal jejunum. She is currently undergoing adjuvant chemotherapy on an outpatient basis.

all of which were normal. Following this, she was commenced on aspirin therapy as secondary prevention of stroke. She subsequently received an iron infusion and was referred to the gastroenterology service for further follow-up. On review in outpatients, some 3 months later, the patient complained of dizziness, exertional shortness of breath, nausea, abdominal cramping, intermittent diarrhoea and weight loss of 5 kg. She denied melaena, night sweats or fever. With regard to family history, she had a brother diagnosed with pancreatic cancer aged 60. However, there was no other significant history of cancer.

Examination revealed a tachycardia of 110 beats per minute, normal blood pressure, normal respiratory rate and oxygen saturation. Pallor was noted. Her abdominal examination did not reveal any abnormalities of note. Splenomegaly and hepatomegaly were absent. There was no palpable lymphadenopathy on examination. Her respiratory and cardiovascular examinations were normal.

BACKGROUND

Ireland has a high prevalence of coeliac disease, estimated at approximately 0.8%.¹ Coeliac disease has several well-recognised nutritional complications, including iron deficiency anaemia which is seen in up to 30% of patients.² Small bowel malignancy, although rarer, is also a recognised complication of coeliac disease³ and should be considered as a potential cause of anaemia, even in patients with established coeliac disease.

Small bowel capsule endoscopy (SBCE) is considered a relatively novel investigation tool in Ireland. Its usefulness, however, in the interrogation of the small bowel in cases of occult gastrointestinal blood loss are showcased in the investigation of this patient.

CASE PRESENTATION

This case focuses on a 70-year-old woman with a 15-year history of coeliac disease. This patient was diagnosed with a retinal artery occlusion 3 months prior to her presentation to the gastroenterology service. At this time, she was noted to have an iron deficiency anaemia with a haemoglobin of 8.8 g/dL, mean corpuscular volume 85 fL and ferritin 5 mcg/L. This was despite excellent compliance with a gluten-free diet and undetectable serum tissue transglutaminase IgA level. IgA subclass concentration was satisfactory. She was investigated with gastroscopy, colonoscopy and a CT abdomen,

INVESTIGATIONS

Her haemoglobin was noted at 7.4 g/L and she was subsequently admitted for blood transfusion and further investigations. Her ferritin was again found to be low at 4 mcg/L. Her B12, folate and calcium were documented as normal. Her vitamin D however was found to be suboptimal and she was commenced on replacement. A review of her duodenal biopsy revealed mild villous blunting, partial villous atrophy and increased intraepithelial lymphocytes (Marsh3A). Immunophenotyping was performed and revealed no abnormal clonal bands. Overall, the findings were felt to reflect type 1 refractory coeliac disease.

Small bowel video capsule endoscopy was performed. Footage from the study revealed an ulcerated lesion in the jejunum (figure 1) and failure of the capsule to reach the caecum. Given this, an abdominal x-ray was performed at 48 hours and revealed a retained capsule. As she was asymptomatic, serial abdominal x-rays were performed until she passed the capsule some 5 days later. Push enteroscopy was performed 2 weeks after capsule endoscopy to obtain a tissue sample and confirmed the presence of an ulcerated structured lesion in the proximal jejunum which could not be traversed (figure 2). Given her background, it was felt that this lesion was most likely to be an enteropathy associated with T-cell lymphoma. Biopsies of the lesion however showed adenomatous change, ulceration and high-grade dysplasia.

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Figure 1 Small bowel capsule endoscopy illustrating an irregular and ulcerated annular lesion in jejunum.

MRI small bowel subsequently showed irregular mucosal thickening with associated mesenteric lymphadenopathy. CT imaging of her thorax, abdomen and pelvis revealed no distant metastases.

TREATMENT

Given the malignant appearance at endoscopy and the MRI findings, the consensus was that this lesion was in keeping with an invasive lesion and the patient went on to resection of her duodenojejunal flexure and greater omentum.

OUTCOME AND FOLLOW-UP

Histology on the resected specimen confirmed a moderately differentiated adenocarcinoma with five of seven lymph nodes positive. Her TNM stage at diagnosis was pT4N2M0. The patient is now under the oncology service and is receiving a

Figure 2 Stenosing lesion of jejunum with contact bleeding visible during push enteroscopy.

course of adjuvant chemotherapy. More definitive management of her refractory coeliac disease has not yet been determined. However, it may involve the use of long-term steroids and immunosuppressants.

DISCUSSION

Small bowel adenocarcinoma is a rare condition accounting for less than 0.5% of cancers per year in Ireland. Its incidence however, is on the rise.⁴ Adenocarcinoma of the small bowel is more common in men when compared with women and those of black race when compared with Caucasian race. It occurs most commonly in the sixth or seventh decade of life.⁵

Small bowel cancers are considered rare, and thus risk factors have yet to be readily identified. Numerous conditions including Crohn's disease, coeliac disease and polyposis conditions such as familial adenomatous polyposis and Peutz-Jeghers syndrome have been shown to be predisposing.^{5 6} Adenocarcinoma of the jejunum and ileum is more common in western countries, which is in keeping with other environmental risk factors such as smoking, obesity and high fat intake.⁶

Patients with coeliac disease have an increased risk of both small bowel adenocarcinoma as well as T-cell lymphoma with both conditions more commonly seen in the jejunum in this population.^{5 7-9} Studies have quoted the increased relative risk of small bowel malignancy in coeliac disease at 10–80-fold.⁷⁻¹⁰

The overall pathophysiology is unknown, although it is thought to arise from the well-recognised adenoma-carcinoma sequence.⁵ Clinical presentation is often vague and a delayed diagnosis is quite common. Most common presentations include abdominal pain, weight loss, nausea and anaemia. Five-year survival is poor for small bowel malignancies with poorly differentiated tumours, lymph node involvement or metastasis and distant metastases as factors predicting poor prognosis.^{6 9 11}

SBCE) comprises a wireless disposable capsule which is swallowed and propelled by gut motility through the gastrointestinal tract. It is a safe and minimally invasive procedure that has been shown to have a high diagnostic yield in the setting of obscure gastrointestinal bleeding.¹² Its yield for detection of small bowel tumours has been noted to be both higher than push enteroscopy and small bowel radiography at approximately 8%.¹²⁻¹⁴

SBCE is recommended by the European Society of Gastrointestinal Endoscopy for the investigation of obscure gastrointestinal bleeding, the assessment of refractory or non-responsive coeliac disease and iron deficiency anaemia where upper and lower endoscopies are inconclusive.¹⁵ It is not recommended for the diagnosis of coeliac disease but is recommended for the assessment of non-responsive or refractory coeliac disease.¹⁵

Learning points

- ▶ This case highlights the need for thorough investigation of iron deficiency anaemia even in those with established coeliac disease.
- ▶ Although a rare complication, small bowel pathology should be considered in those in whom gastroscopy and colonoscopy are normal.
- ▶ Small bowel capsule endoscopy provides a novel and non-invasive method of investigation for small bowel pathology. Hence, it is an investigation that should be considered in cases such as this.

The disadvantages of SBCE include its inability to retrieve a tissue sample or administer therapy and its ability to be retained in approximately 1.4%.¹⁶

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