CASE REPORT

Solitary juvenile polyp as a cause of elevated faecal calprotectin in an adult

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SUMMARY

Faecal calprotectin (FCP) levels are commonly measured in both primary and secondary care as an adjunct to the diagnosis of inflammatory bowel disease (IBD). Juvenile polyps are a rare form of colonic polyp found in both adults and children. We present a case of an adult patient who presented with a very high FCP level, which subsequently normalised following removal of a solitary colonic juvenile polyp. There was no evidence of IBD. Elevation of FCP levels due to this type of colonic pathology have not previously been described in the literature.

BACKGROUND

Faecal calprotectin (FCP) is commonly elevated in inflammatory colorectal diseases and as such its use is recommended at an early stage of investigation for inflammatory bowel disease (IBD). However, elevation of FCP due to a juvenile colonic polyp has not been previously reported in the adult population.

CASE PRESENTATION

A 46-year-old man presented with a 6-week history of loose stools containing small amounts of bright red blood. He described no other symptoms and there was no associated comorbidity or family history of gastrointestinal diseases. General and abdominal examination, including digital rectal examination, was unremarkable. A single grade 1 haemorrhoid was noted on sigmoidoscopy.

INVESTIGATIONS

Haematological testing demonstrated a normal full blood count. Serum C reactive protein and antinuclear antibody levels were also normal. The FCP was markedly raised at 2100 mg/kg (normal range 0–49 mg/kg).

Further investigation with fiberoptic colonoscopy visualised colonic mucosa to the mid-transverse colon level. Normal mucosa was present aside from a 10 mm pedunculated polyp in the sigmoid colon. This polyp displayed unremarkable macroscopic appearances. Subsequent CT colonography (performed to exclude any pathology in the non-visualised right colon) demonstrated no further colonic abnormalities. The polyp found was excised by snare polypectomy. Random colonic biopsies were performed to investigate the possibility of microscopic colitis. Histological analysis of the excised polyp demonstrated an inflammatory

polyp of juvenile type with no dysplastic changes. The random colonic biopsies were normal.

OUTCOME AND FOLLOW-UP

At clinical review 4 weeks later, the patient's symptoms had resolved completely and the FCP level had returned to 24.6 mg/kg. Eighteen months later, the patient remained asymptomatic with no recurrence of rectal bleeding.

DISCUSSION

Calprotectin is a non-glycosylated human protein with a molecular weight of 36.5 kDa found in high concentrations in the cytosol of neutrophil granulocytes. Small amounts are also detected in monocytes and activated macrophages. The activation, migration and degranulation of neutrophils that occurs during inflammation in the gastrointestinal tract results in calprotectin release. Calprotectin can then be detected in serum, cerebrospinal fluid, synovial fluid and faeces, where it is stable for up to 7 days.

Currently, FCP is recommended as an aid in distinguishing between IBD such as Crohn's disease or ulcerative colitis and non-IBD, for example irritable bowel syndrome.¹ Elevated levels are also transiently detectable during episodes of infectious diarrhoea, with bacterial causes of diarrhoea such as *Campylobacter* and *Salmonella* appearing to give a higher FCP level than those of viral origin.² The enteropathy associated with non-steroidal anti-inflammatory drugs is also recognised to cause elevated FCP levels.³

Inflammatory juvenile polyps (also known as juvenile hamartomatous polyps or juvenile polyps) are sporadic polyps that are confined to the colon and rectum. Multiple polyps or an extracolonic location may indicate a juvenile polyposis syndrome. Histologically, they have a characteristic appearance, with prominent cystically dilated glands and an abundant inflamed stroma. Dysplastic changes are a rare event and most polyps behave in a benign fashion. Although juvenile polyps are the most common polyp found in children,⁴ they are more commonly found in adults rather than children.⁵ Despite this, they are a rare finding in adults, in one series representing just 0.1% of all adult polyps.⁶

The finding of a significantly elevated FCP level associated with a juvenile polyp in an adult with an otherwise normal colon, and the subsequent normalisation of FCP levels following endoscopic polypectomy has not been previously described.

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The only previous report of an elevated FCP level in association with a juvenile polyp is in a small paediatric cohort.⁷ Our findings are important and suggest that additional investigations for an elevated FCP level may not be necessary if initial colonoscopy does not demonstrate obvious IBD.

Learning points

- The association between elevated levels of faecal calprotectin and inflammatory bowel disease is well recognised, although the association with bacterial infections and non-steroidal anti-inflammatory drugs may be less well known.
- An incidental finding of a solitary polyp in an otherwise normal colon does not always mandate additional investigations and histological analysis should be awaited.

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