

# Collagenous gastritis: a rare cause of anaemia in childhood

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## Abstract

We report a thirteen year old boy presenting with severe iron deficiency anaemia. Initial extensive investigation failed to reveal an obvious cause. Subsequently a diagnosis of collagenous gastritis was made. To our knowledge this is the first report of a patient with this rare condition in the Maltese islands.

## Introduction

Collagenous gastritis is a rare entity, with only less than 30 cases reported worldwide so far, including 12 children. Since the first case published by Colletti and Trainer in 1989<sup>1</sup> several cases have been reported. In children, the condition usually but not exclusively affects the stomach, while in adults it may affect other areas of the gastrointestinal tract. Children often present with severe anaemia and epigastric pain, with no evidence of extra-gastric involvement, in contrast to the adult patients, where chronic watery diarrhoea is the main presentation due to associated collagenous colitis. A macroscopic pattern of gastritis with nodularity of gastric mucosa, erythema and erosions are characteristic endoscopic findings in paediatric patients<sup>1-3</sup>. Anaemia is usually quite severe and although responsive to iron supplementation recurs due to ongoing bleeding. Blood loss from the stomach is slow and may not result in melaena. Epigastric or abdominal pain may not be present. Gastroenterologists and paediatricians need to be aware of this condition when evaluating a child with epigastric pain, anaemia and upper gastrointestinal bleeding, particularly when endoscopy reveals nodularity of the gastric mucosa.

## Case report

JD, a thirteen year old, previously healthy male presented with a two month history of increasing pallor. He had been on a weight reduction diet for about three months due to obesity but the dietary history did not reveal any particular food exclusion. He was not receiving any vitamin supplementation and had reported a weight loss of about seven kilograms. There was no history of abdominal or epigastric pain and no diarrhoea or melaena was reported. On examination the patient weighed 45 kg (50<sup>th</sup> percentile for weight) and was obviously pale. There was no jaundice or lymphadenopathy. Examination of the nails showed koilonychia. The chest, cardiovascular system and abdomen were normal. Initial investigations performed are shown in Table 1.

JD was transfused with three units of packed cells and started on iron supplements. An oesophago-gastroscopy showed a nodular gastritis with erythema and some surface ulceration of the gastric mucosa. There was no evidence of reflux oesophagitis. The duodenum showed flattened Kerckring folds with a mosaic appearance (Figure 1). Histology of the gastric mucosa revealed infiltration by lymphocytes and plasma cells. A prominent

## Keywords

Collagenous gastritis, gastrointestinal bleeding, anaemia

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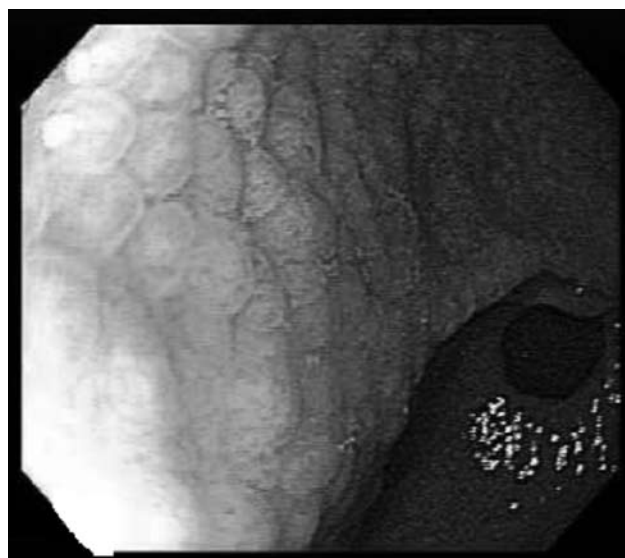
**Table 1: Investigations**

Haemoglobin	4.7 g/dl
WBC and differential	4.8 x 10 <sup>9</sup> /l
Platelets	540 x 10 <sup>9</sup> /l
Serum ferritin	<1.5ng/ml (Range: 28-365)
Folate / B12 level	Normal
Coeliac screen	Normal
Faecal occult blood	Negative
Total iron binding capacity	435Feug/dl (Range: 250-500)
Serum iron	10µg/dl (Range: 65-175)
Liver function tests	Normal
Serum haptoglobin	Normal
Thyroid function tests	Normal
Haemoglobin electrophoresis	Normal
G6PD assay	Normal
ESR	3mm in the first hour
CRP	<6mg/l

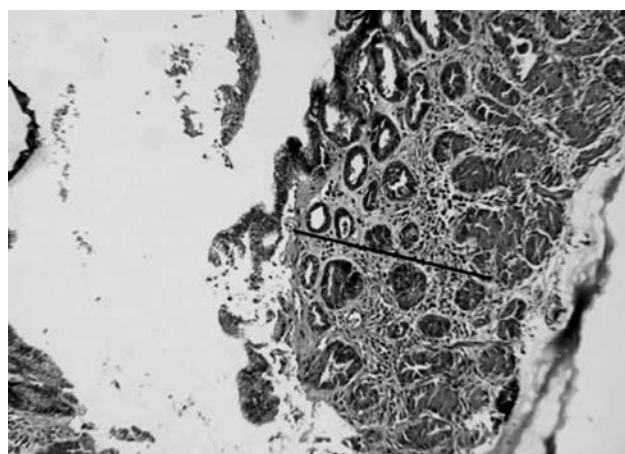
band of collagen deposit was seen in the subepithelial region (Figure 2). Duodenal biopsies did not reveal any abnormalities. Macroscopic and microscopic examination of the colon was normal. A barium meal and follow through examination showed no abnormalities. Capsule video endoscopy (Pill Cam®) on a separate occasion showed free blood within the gastric fundus and a nodular gastritis (Figure 3). The rest of the examination was normal. *Helicobacter pylori* antibodies and rapid urease test on the antral mucosa test were negative. Treatment with esomeprazole 40mg daily was started and iron supplements initiated. JD was advised to avoid non-steroidal analgesics and aspirin.

## Discussion

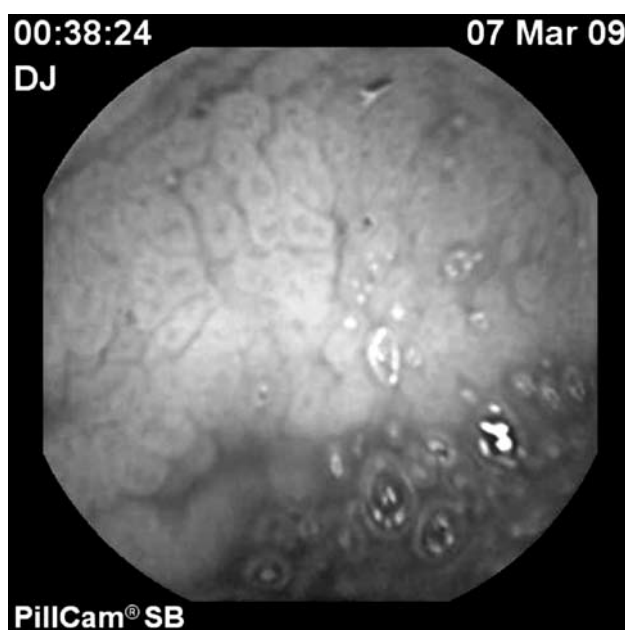
In this article we report a case of collagenous gastritis in a child. Collagenous gastritis is a rare entity, with only less than 30 cases reported so far, including 12 children, since the first description of this entity by Colletti and Trainer in 1989. This is a histological diagnosis characterised by a dramatically thickened subepithelial collagen band in the gastric mucosa associated with an inflammatory infiltrate.<sup>2,4,5</sup> The thickness of the band must be above 10µm in size to be significant. Collagen bands as thick as 150µm have been reported.<sup>2</sup> Children with this condition often present with severe anaemia, with or without epigastric or abdominal pain and with no evidence of extra-gastric involvement, in contrast to the adult patients, where chronic watery diarrhoea is the main presentation due to associated collagenous colitis. A macroscopic pattern of gastritis with nodularity of gastric mucosa, erythema and erosions are characteristic endoscopic findings in paediatric patients. Specific therapy has not been established and resolution of the abnormalities, either endoscopic or histological, has not been documented.<sup>6</sup> The use of proton pump inhibitors may be useful for patients who have associated epigastric pain. Iron supplementation should be continued and avoidance of aspirin and non-steroidal analgesics should be advised.



**Figure 1:** Nodular gastritis on Gastroscopy



**Figure 2:** Thick collagen layer on gastric biopsy with an infiltrate of lymphocytes and plasma cells typical of collagenous gastritis



**Figure 3:** Nodular gastritis and free blood in stomach on PillCam®

Previous studies on a limited number of patients seem to delineate two subsets in patients with collagenous gastritis: (a) collagenous gastritis occurring in children and young adults presenting with severe anemia, a nodular pattern on endoscopy, and a disease limited to the gastric mucosa without evidence of colonic involvement, and (b) collagenous gastritis frequently, but not always, associated with collagenous colitis occurring in adult patients presenting with chronic watery diarrhea.<sup>6,7</sup>

In conclusion, collagenous gastritis is a rare entity of unknown aetiology, pathogenesis and prognosis. Gastroenterologists and paediatricians need to be aware of this condition when evaluating a child with epigastric pain, anaemia and upper gastrointestinal bleeding, particularly when endoscopy reveals nodularity of the gastric mucosa. The identification, reporting and long-term follow-up of cases will shed more light on this puzzling condition.

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