Figure 1 (A) An 8 mm sigmoid polyp with depressed area on the polyp head, high definition (HDTV) white light image, snare catheter adjacent to polyp. (B) Narrow band imaging with magnification showing loss of pit pattern in depressed area (Kudo type V, non-structural, arrow) adjacent to type III_L pattern (arrowhead). (C) Histology of the polyp showing that adenocarcinoma had developed within the polyp head but the resection margin was clear (H&E, magnification $\times 25$). The inset shows tumour budding, indicating that the polyp was high risk (H&E, magnification $\times 400$).

lesions (range 77–91%, polyps ≤ 6 mm).⁵ However, Chiu *et al* included only one carcinoma of unknown size, and it therefore remains unclear whether NBI can accurately characterise small polyp carcinomas where endoscopic management is different and formal histopathology is mandatory.³ We report a case where NBI was able to characterise an

8 mm carcinoma in vivo with appropriate modification of the endoscopic approach.

A 65-year-old man who had had a low anterior resection for a Duke's B rectal carcinoma 4 years previously presented for his third surveillance colonoscopy. A high definition (HDTV) colonoscope was used which had the capacity to magnify up to 100 times with a prototype narrow band imaging system (XCF-H240FZL/I video colonoscope, XCLV-260HP xenon light source and XCV-260HP video system centre; Olympus, Japan). During withdrawal an 8 mm polyp was seen in the sigmoid colon on white light examination. The polyp was sub-pedunculated on a broad-based stalk with a slightly depressed area on one side of the polyp head (fig 1A). NBI with magnification of the depressed area showed a Kudo type V non-structural pit pattern with type III_L pit pattern adjacent (fig 1B). In view of the likelihood of invasive carcinoma, the polyp was carefully snare resected lower on the stalk than usual to try to ensure a clear excision margin and two tattoos were placed immediately distal to the polypectomy site. Histological examination confirmed an adenocarcinoma with a clear resection margin G2, pT1, pV1, Nx, Mx, R0, Haggitt level 2 (invasion of the polyp neck), with high risk features of vascular invasion and tumour budding (fig 1C). A CT scan of the thorax and abdomen revealed no local lymphadenopathy or distant metastasis. In view of multiple co-morbidities, it was decided to view the endoscopic resection as definitive treatment.

This case suggests, in combination with the report of Chiu *et al*, that NBI is able to fulfil the characterisation qualities of methylene blue for small polyps in a more time-efficient way and without the need for potentially carcinogenic dyes.³ Colonoscopists should prepare themselves for the era of routine "endohistology" as NBI becomes widespread.

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James E East

Wolfson Unit for Endoscopy, St Mark's Hospital, Harrow, Middlesex, UK

Thomas Guenther

Academic Department of Cellular Pathology, St Mark's Hospital, Harrow, Middlesex, UK

Robin H Kennedy

Department of Surgery, St Mark's Hospital, Harrow, Middlesex, UK

Brian P Saunders

Wolfson Unit for Endoscopy, St Mark's Hospital, Harrow, Middlesex, UK

Correspondence to: Dr James E East, Wolfson Unit for Endoscopy, St Mark's Hospital, Watford Road, Harrow, Middlesex HA1 3UJ, UK; jameseast6@yahoo.com

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Infliximab and adalimumab-induced thrombocytopenia in a woman with colonic Crohn's disease

We report here a case of drug-related thrombocytopenia associated with infliximab and later with adalimumab in a patient with Crohn's disease. A 42-year-old woman was diagnosed with colonic Crohn's disease with perianal fistula lesions (Perianal Disease Activity Index (PDAI) = 11). She was treated with metronidazole and azathioprine. After 2 months the patient remained symptomatic and three infusions with infliximab (monoclonal antibody against tumour necrosis factor α (TNF α)) at a dose of 5 mg/kg were administered at 0, 2 and 6 weeks. The symptoms decreased and improvement was noted (PDAI = 2). Maintenance therapy with infliximab every 8 weeks was started. After three additional infusions, a routine blood count showed thrombocytopenia of $44 \times 10^9/l$ (fig 1) with normal haemoglobin, white blood cell count and coagulation tests. Pseudo-thrombocytopenia was ruled out and a bone marrow examination showed normal haemopoiesis with an increased number of megakaryocytes. IgG and IgM anticardiolipin antibody tests were negative. A platelet antibody test detected a platelet-associated IgG on the platelet surface. All drugs were withdrawn and prednisone was started because of exacerbation of Crohn's disease symptoms. Five months later a normal platelet count was achieved with a negative platelet antibody test. Azathioprine was started because of active draining fistulas but, owing to inadequate control, a single dose of 80 mg adalimumab was administered. The platelet count fell again. Of note, while receiving azathioprine treatment, the platelet count recovered.

Drug-induced thrombocytopenia is a challenging clinical problem in a patient who is taking several medications or has a condition that could be related to idiopathic thrombocytopenic purpura. However, in our patient, drug-induced thrombocytopenia could be diagnosed with level I evidence; a clear temporal relation was seen with exposure to infliximab. Typically, the median time from starting treatment with the drug to the initial episode of thrombocytopenia is 14 days and the time to platelet recovery is 1–30 days.¹ In our case the platelet count recovered at 5 months. However, this behaviour is not evidence against a causal role for anti-TNF α monoclonal antibody-induced thrombocytopenia because other drugs such as gold salts are typically associated

Figure 1 Platelet count since diagnosis of Crohn's disease. ↓, infusion of infliximab; ⇓, infusion of adalimumab.

with persistently low platelet counts for many months. Moreover, the second episode of thrombocytopenia 1 week after the adalimumab infusion is consistent with the typical picture of onset of thrombocytopenia after rechallenge.

Monoclonal antibodies against TNF α are used for the treatment of patients with autoimmune disorders who have had an inadequate response to conventional treatment.^{2,3} In patients with Crohn's disease, TNF α is a key proinflammatory cytokine and infliximab is an established treatment for patients resistant to conventional therapy. Infliximab is a chimeric monoclonal antibody because it is manufactured with mouse binding VK and VH domains and human constant Fc domains. In contrast, adalimumab is constructed from a fully human monoclonal antibody but shares the same Fc domain with infliximab. Both antibodies bind to the same region of TNF α , preventing it from activating TNF receptors and inducing down-regulation of inflammatory reactions associated with autoimmune diseases.

Some autoimmune side effects have been described with infliximab.³⁻⁶ Although the mechanisms underlying them are unknown, autoantibodies produced during apoptosis could play a role in the pathogenesis of this phenomenon. We hypothesise the possible contribution of such a mechanism, or even the involvement of antibodies against infliximab that later recognise the Fc domain of adalimumab. The temporal relation between the initiation of anti-TNF α monoclonal antibodies and the onset of thrombocytopenia, in addition to the effects of the discontinuation and resumption of anti-TNF α monoclonal antibodies, are definite evidence of anti-TNF α -induced thrombocytopenia in our case. In patients with a suspicion of immune side effects after infliximab treatment, the use of other antibodies against TNF α should therefore be discouraged.

Antonio Salar

Department of Clinical Haematology, Hospital del Mar, Universitat Autònoma de Barcelona, Spain

Xavier Bessa

Department of Gastroenterology, Hospital del Mar, Universitat Autònoma de Barcelona, Spain

Eduard Muñoz

Servei de Immunologia del Banc de Sang i Teixits, Barcelona, Spain

David Monfort

Department of Gastroenterology, Hospital del Mar, Universitat Autònoma de Barcelona, Spain

Carlos Besses

Department of Clinical Haematology, Hospital del Mar, Universitat Autònoma de Barcelona, Spain

Montserrat Andreu

Department of Gastroenterology, Hospital del Mar, Universitat Autònoma de Barcelona, Spain

Correspondence to: Dr Antonio Salar, Department of Clinical Hematology, Hospital del Mar, Passeig Marítim 25-29, 08003 Barcelona, Spain; asalar@imas.imim.es

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Non-alcoholic fatty liver disease in patients with HCV genotype 4

Hepatitis C infection is considered the leading cause of chronic liver disease in Egypt. Hepatitis C virus (HCV) genotype 4 is the predominant genotype in the Middle East including Egypt.¹

A striking feature of HCV infection is its association with fat accumulation within hepatocytes,² which is defined by the presence of hepatic steatosis with or without steatohepatitis.³ Hepatic steatosis has been reported in 30-70% of patients with HCV infection, even when the most common causes of steatosis are excluded.⁴ A causal relationship between infection with HCV genotype 3 and the incidence of hepatic steatosis has been elicited.⁵

In Egypt the true prevalence of non-alcoholic fatty liver disease is unknown among patients with HCV who are commonly infected with genotype 4. Our aim was to determine the prevalence of steatosis in patients infected with HCV genotype 4 and to correlate steatosis with risk factors such as obesity, type 2 diabetes mellitus, hypertriglyceridaemia and the impact of steatosis on necroinflammatory injury and fibrosis score.

The study was conducted at Cairo Liver Center and included all patients who underwent liver biopsy during the period from January 2003 to May 2005. One hundred and twenty-four patients were diagnosed with chronic HCV genotype 4 (group 1) and 48 subjects with non-HCV chronic liver disease matched for age and sex were included for comparison (group 2). The histopathological, clinical and biochemical features of all patients were reviewed. Associated comorbid conditions such as overweight/obesity (body mass index ≥ 25 kg/m²), type 2 diabetes mellitus and hypertriglyceridaemia were studied for their correlation with steatosis. Further assessment of the biopsy specimens with steatosis was carried out to identify steatohepatitis. The paraffin sections were retrieved and new 4 μ m thick sections were obtained and immunohistochemical staining for cytokeratin 8/18 was applied to detect Mallory hyaline bodies (fig 1).

Steatosis was mainly macrovesicular in all specimens and was detected in 50 (40.3%) patients in group 1 and 16 (33.3%) patients in group 2 ($p = 0.550$). Steatohepatitis was identified in four patients in group 1, which was

Figure 1 Immunohistochemical staining for cytokeratin 8/18 and detection of Mallory hyaline bodies (peroxidase $\times 400$).