Discussion

Direct damage to coronary arteries (intimal tears, atheromatous plaque fissuring or coronary artery rupture)¹ can occur following non-penetrating chest trauma. In general, the trauma is of severe magnitude; reports in the literature most commonly describe cases involved in road traffic accidents.^{2,3} In most cases underlying atheromatous coronary artery disease is presumed to be present, since angiographic imaging is generally not available. Where no atheromatous disease is evident, arterial occlusion resulting from intimal tears has been described.² Cases where angiography is undertaken immediately after initial presentation appear to be rare. This case is unusual in that the chest trauma was of considerably smaller magnitude than is usually the case and occurred in a 'controlled' operative situation. Furthermore, coronary arteriography was undertaken within 30 minutes of the onset of

symptoms and revealed extensive thrombus within the right coronary artery.

Thrombus formation in otherwise normal coronary arteries secondary to catecholamine-mediated spasm is a rarely described phenomenon,⁴ but is unlikely to have been a factor in our patient since no electrocardiographic ST segment changes were apparent during the course of his general anaesthesia. Microscopic intimal tears, not visible on angiography, may have precipitated thrombus formation in this case. The relatively low magnitude of chest trauma suggests that this phenomenon may be a contributory factor in some cases of peri-operative myocardial infarction following cardiothoracic surgery. Thus in patients presenting with electrocardiographic features of acute myocardial infarction following blunt chest trauma (including 'controlled' surgical trauma) early coronary angiography should be considered.

1 Allen RP, Liedtke AJ. The role of coronary artery injury and perfusion in the development of cardiac contusion secondary to non-penetrating chest trauma. *J Trauma* 1979; 19: 153-6.

2 Pringle SD, Davidson KG. Myocardial infarction caused by coronary artery damage from blunt chest injury. *Br Heart J* deficiency 1987; 57: 375-6.

3 Pifarre R, Grieco J, Garibaldi A, Sullivan HJ, Montoya A, Bakhos M. Acute coronary artery occlusion secondary to blunt chest trauma. *J Thorac Cardiovasc Surg* 1982; 83: 122-5.

4 Vincent GM, Anderson JL, Marshal HW. Coronary spasm producing coronary thrombosis and myocardial infarction. *N Engl J Med* 1983; 309: 220.

Primary Sjogren's syndrome, ulcerative colitis and selective IgA deficiency

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Summary

A 24-year-old man with primary Sjogren's syndrome presented with xerophthalmia, xerostomia, and marked parotid swelling. He had a previous history of selective IgA deficiency and ulcerative colitis treated with sulphasalazine. Immunosuppression and withdrawal of sulphasalazine resulted in rapid resolution of the parotitis and disappearance of autoantibodies. A possible role for sulphasalazine in the induction of autoimmunity in this case is discussed.

Keywords: Sjogren's syndrome, ulcerative colitis, IgA deficiency

Primary Sjogren's syndrome is a chronic autoimmune disease of unknown aetiology predominantly affecting women in middle age. Ulcerative colitis has been rarely reported in association with Sjogren's syndrome, however both conditions may occur more often in the presence of selective IgA deficiency. We report a patient with ulcerative colitis who

developed Sjogren's syndrome in the presence of selective IgA deficiency whilst on long-term sulphasalazine treatment and suggest a role for the sulphasalazine in the development of autoimmunity.

Case report

An 18-year-old Asian man presented in April 1988 with a haemorrhagic colitis. Routine haematological and biochemical profiles were normal, though the erythrocyte sedimentation rate (ESR) was raised at 65 mm/h. Colonic biopsy confirmed the typical histological features of ulcerative colitis. The patient was treated with low-dose steroids which were withdrawn after six months and sulphasalazine 1 g bid. He maintained a reasonable remission with only occasional flares of active colitis.

In July 1994 he presented with swollen parotid, submandibular and lacrimal glands, widespread cervical lymphadenopathy, xerostomia, xerophthalmia and myalgia. Schirmer's test (strips for measuring tear production) was dry (right eye 4 mm, left 6 mm after five

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minutes). Ophthalmic assessment showed evidence of mild retinal vasculitis but no other physical abnormalities. A full blood count, renal and liver function were normal. Other investigations; ESR 48 mm/h, C-reactive protein 2 mg/ml (normal range <10), serum angiotensin-converting enzyme (ACE) 27 IU/l (12-80), antinuclear antibody (ANA) 1:320 diffuse pattern, double-stranded DNA (dsDNA) 1:160, extractable nuclear antigen negative, rheumatoid factor (RF) negative. Complement levels were low, C3 0.53 g/l (0.70-1.70), C4 <0.08 g/l (0.20-0.65), cryoglobulins not detected. IgG 25.0 g/l (5.4-16.1), IgA <0.07 g/l (0.8-3.4) and IgM 0.54 g/l (0.5-2.0). Chest X ray was normal and a mantoux test negative. Biopsy of a cervical lymph node showed reactive changes only and a lip biopsy showed a dense lymphocytic infiltrate of the minor salivary glands consistent with Sjogren's syndrome. The patient possessed a slow acetylator phenotype.

He was commenced on prednisolone 20 mg and azathioprine 100 mg and sulphasalazine was stopped. Six months later dsDNA was negative and ANA positive to a titre of 1:80. One year later the ANA was negative (though RF was 1:160), the parotid swelling resolved and the systemic symptoms are well controlled on prednisolone 5 mg daily. C4 remains low at 0.14 g/l and IgA is less than 0.07 g/l.

Discussion

Although Sjogren's syndrome and ulcerative colitis are both relatively common conditions, their coexistence has rarely been described.^{1,2} IgA deficiency, the commonest form of primary immunodeficiency (occurring in 1/700 in the UK), is considered a risk factor of organ-specific and systemic autoimmune disease.³ An association with systemic lupus erythematosus⁴ and juvenile rheumatoid arthritis⁵ has been established. In Sjogren's syndrome and ulcerative colitis few cases have been reported, however, reduced mucosal defence in IgA deficiency may be a simple predisposing factor to chronic submucosal inflammation and immunostimulation.

Sulphasalazine has been associated with lupus-like syndromes in patients treated for inflammatory bowel disease and, more recently, in rheumatic disease.⁶ Sulphasalazine therapy is also an iatrogenic cause of selective IgA deficiency and in one study occurred in 3% of patients between eight and 20 weeks after starting treatment.⁷ It may have predisposed our patient to autoimmune disease, but we feel the persistence of low levels of IgA one year after drug withdrawal makes this less likely. In contrast to other forms of drug-induced lupus, sulphasalazine-treated patients often develop high-affinity antibodies to dsDNA which disappear on drug withdrawal, may be associated with hypocomplementaemia and may take many months to resolve. This patient with Sjogren's syndrome was atypical in being a young male, possessing double-stranded DNA antibodies (normally associated with lupus), in the absence of extractable nuclear antigen (in particular Ro and La), the marked hypocomplementaemia and disappearance of auto-antibodies a year after drug withdrawal, though immunosuppressive therapy was continued throughout. It is conceivable that treatment with sulphasalazine may have contributed to the induction of autoimmunity in our patient, but to our knowledge no case of primary Sjogren's syndrome has been reported due to sulphasalazine therapy, although of course it often occurs secondary to systemic autoimmune diseases in patients on sulphasalazine. Furthermore, our patient's slow acetylator phenotype may represent an additional risk factor.

The persistent low C4 levels in the current case, even after apparent remission, is suggestive of a non-functioning C4 gene, with at least one C4 null allele. This is known to predispose to idiopathic and drug-induced systemic lupus erythematosus as well as Sjogren's syndrome.⁸ Furthermore, IgA deficiency is often found in association with C4 null alleles in patients with autoimmune disease, notably in the presence of HLA-A1, B8, DR3 haplotype, though our patient was not tissue typed.

- 1 Triantallidis JK, Roussou P, Manousos ON, Dadioti P, Nicolakis D. Ulcerative colitis and Sjogren's syndrome in the same patient: report of two cases and review of the literature. *Ital J Gastroenterol* 1994; 26: 299-302.
- 2 Johnson CD. Obstructive jaundice in a patient with ulcerative colitis, Sjogren's syndrome and sarcoidosis. *J R Soc Med* 1989; 82: 362.
- 3 Liblau RS, Bach J-F. Selective IgA deficiency and autoimmunity. *Int Arch Allergy Immunol* 1992; 99: 16-27.
- 4 Cassidy JT, Burt A, Petty R, Sullivan DB. Selective IgA deficiency in connective tissue diseases. *N Engl J Med* 1968; 280: 275.
- 5 Barkley DO, Hohermuth HJ, Howard A, Webster ADB, Ansell BM. IgA deficiency in juvenile chronic polyarthritis. *J Rheumatol* 1979; 6: 219-24.

- 6 Laversuch CJ, Collins DA, Charles PJ, Bourke BE. Sulphasalazine-induced autoimmune abnormalities in patients with rheumatic disease. *Br J Rheumatol* 1995; 34: 435-9.

- 7 Farr M, Kitis GD, Tunn EJ, Bacon PA. Immunodeficiencies associated with sulphasalazine therapy in inflammatory arthritis. *Br J Rheumatol* 1991; 30: 413-7.

- 8 Ruddy S. Complement deficiencies and rheumatic diseases. In: Kelly WN, Harris ED, Ruddy S, Sledge CB, eds. *Textbook of rheumatology*, 4th edn. Philadelphia: WB Saunders Co, 1993; pp 1283-9.