

# Idiopathic Thrombocytopenic Purpura and Hyperthyroidism

## A Case Report

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### SUMMARY

A case of immune thrombocytopenic purpura (ITP) and hyperthyroidism is presented. The treatment of refractory ITP with immunosuppressive agents is briefly considered.

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In 1931 a patient with coexistent purpura and hyperthyroidism, in whom the purpura disappeared after thyroidectomy, was described.<sup>1</sup>

Since that time there have been scattered reports of the two conditions having occurred simultaneously.<sup>2,3</sup> It is the purpose of this case report to focus attention on the possible relationship between the two conditions and the response of the idiopathic thrombocytopenic purpura (ITP) to immunosuppressive agents.

### CASE REPORT

A 16-year-old White girl presented in December 1972 with a 4-week history of easy bruising and purpura, and haematuria the day before presentation. Apart from scattered bruises and purpuric spots on her body, physical examination showed no abnormality. The haemoglobin level was 10 g/100 ml, the white cell count 4 000/ $\mu$ l and the platelet count 63 000/ $\mu$ l. The differential count and ESR were normal. Screening tests for collagen disease were all negative. She was given 40 mg prednisone daily, and 1 week later her platelet count was 140 000/ $\mu$ l. She remained asymptomatic and her count remained stable in spite of a gradual reduction in the steroid dosage to 10 mg/day. However, in May 1975 she again developed purpura and the platelet count was 14 000/ $\mu$ l. Examination of the bone marrow showed it to be normal, with active thrombopoiesis.

Splenectomy was performed under increased steroid cover and this resulted in a transient elevation of the platelet count to 106 000/ $\mu$ l. Thereafter, in spite of large doses of steroids, the platelet count again fell to less than 12 000/ $\mu$ l, and she developed purpura, easy bruising and menorrhagia.

In January 1976, overt clinical signs of thyrotoxicosis developed, and therapy with carbimazole was commenced. In spite of a return to the euthyroid state, there was no change in the platelet count, and the patient was again

symptomatic, with purpura, bruising and menorrhagia.

In March 1976, treatment with azathioprine 3 mg/kg was commenced, in addition to an unaltered 15 mg/day of fluorocortelone. Within 1 month the patient's platelet count rose from 7 000/ $\mu$ l to 50 000/ $\mu$ l, and 4 weeks later it was in excess of 100 000/ $\mu$ l. Steroid dosage was then gradually reduced to 15 mg on alternate days, but an attempt to diminish the azathioprine led to a prompt fall in the platelet count. On 100 mg azathioprine per day and 10 mg fluorocortelone on alternate days, the count has remained in the vicinity of 90 000/ $\mu$ l, and the patient has remained asymptomatic.

### DISCUSSION

There appears to be an increased prevalence of hyperthyroidism and, indeed, of latent Graves' disease in patients with ITP. Marshall *et al.*<sup>3</sup> reported that 4 of 42 patients with ITP had clinically overt hyperthyroidism, and that in 2 other patients laboratory tests showed evidence of hyperthyroidism. Since both conditions are thought to have an underlying auto-immune mechanism, it is surprising that the incidence is not higher, as in systemic lupus erythematosus (SLE).

Patients with severe ITP refractory to steroid therapy present a problem of management, especially when bleeding complications arise. The periwinkle alkaloids, vincristine and vinblastine, have been successfully used to elevate the platelet count in the short term, until slower-acting immunosuppressive agents begin to have an effect.<sup>4-6</sup> Recently, Finch *et al.*<sup>7</sup> reviewed 94 patients reported in the literature and added 12 of their own. They noted that about 50% of the patients responded to immunosuppressive agents, and that in most of the responders the ITP had been of short duration, which suggested that the response was perhaps spontaneous. They noted, too, that the probability of response to immunosuppressive agents is much greater in the patient who has undergone splenectomy.

Azathioprine and cyclophosphamide appeared to be the agents of choice. Although cyclophosphamide is a more potent immunosuppressive agent, the potential complication rate is far higher.

In our patient we delayed the use of immunosuppressive agents until the euthyroid state was achieved, in the hope that the platelet count would revert to normal *pari passu*. When it became clear that this was not the case, we chose azathioprine as the potentially less toxic drug and 'titrated' the dose to the platelet count. The patient has remained asymptomatic on an alternate-day steroid regimen, with a small dose of azathioprine, and it is suggested that in severe ITP refractory to steroids and splenectomy, azathioprine is probably the initial drug of choice for long-term therapy.

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## An Obscure Inherited Neuropathy Characterized by Pain and Weakness

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### SUMMARY

Two brothers with inherited muscular atrophy and particular proneness to painful limbs are described. Symptoms of disease began at an early age with severe pains in the extremities. The pain is particularly aggravated by heat or fever and over the years has been associated with progressive muscular atrophy and sensory loss. A prominent feature of biopsy specimens was the tomaculous swellings which affected the myelin of the nerve axon and the motor nerve terminals.

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Peripheral nerve abnormalities may present pathologically either as disease of the axon (Wallerian degeneration), as abnormalities of the myelin sheath or as an abnormality affecting both these structures. The myelin sheath was first adequately studied by Ranvier<sup>1</sup> and the changes which occur during nerve degeneration and which involve the myelin sheath and axon have been well described by Bradley.<sup>2</sup> Dayan *et al.*<sup>3</sup> described globular thickening of the myelin sheath in an inherited condition which affected both axon and Schwann cells. Behse *et al.*<sup>4</sup> described 'sausage-like' swellings of the myelin sheath which occurred in 3 different families suffering from inherited pressure-sensitive neuropathy. Madrid and Bradley<sup>5</sup> also described 'sausage-shaped' thickening of the myelin sheath in 4 patients and suggested that the term 'tomaculous neuropathy' be used in preference to 'sausage body neuropathy'. The patients presented in this article were found

to have 'sausage-like' swellings involving the myelin of both peripheral nerve and motor nerve terminals. The syndrome is characterized by the association of muscular atrophy and the presence of intense pain in the extremities, provoked by exposure to heat.

### CASE REPORTS

#### Case 1

A 12-year-old boy had had muscular weakness since infancy and the condition was slowly progressive. The weakness mainly affected his lower limbs. He had two older brothers, one of whom is similarly affected; the other is perfectly normal. There is no history of neuromuscular disease in any other member of the family.

On examination, he was found to be of average intelligence. He complained of pains in the legs and feet, which were aggravated by heat or hot weather and had been particularly troublesome at times when, for one reason or another, he had developed a fever.

Muscle power in the hands, forearms and arms was reduced, the most severely affected areas being the most distal. There was weakness of movement about the ankle joints and some slight weakness in the muscles acting about the knee joints. There was bilateral pes cavus and generalized wasting of the extremities which was more marked distally, as well as evidence of contracture formation in the calf muscles bilaterally. Slight winging of both scapulae was present. The tendon jerks were present and equal on both sides and the cutaneous responses were normal. There was some evidence of slight loss in sensation of all modalities in a glove-and-stockings distribution affecting both upper and lower extremities. The central nervous system was normal.

His electrocardiogram showed marked sinus arrhythmia, the axis was +60 and otherwise normal. Tests for rheumatoid arthritis and antinuclear factor and serum protein

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