Sideropenic Dysphagia, Hashimoto's Thyroiditis and Chronic Gastritis*

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SUMMARY

A patient with sideropenic anaemia, chronic gastritis, upper oesophageal web and Hashimoto's thyroiditis is described. The association suggests a common autoimmune process.


There are well-described associations between iron deficiency anaemia and gastritis,1,2 and between thyroiditis and gastritis.3,4 Similar associations between anaemia, sideropenia, oesophageal web and thyroid disease are recognized.5,9 The patient described here presented with dysphagia, and examination showed hypochromic iron deficiency anaemia, an upper oesophageal web, Hashimoto's thyroiditis and chronic gastritis.

CASE REPORT

A 28-year-old White married telephonist presented with a complaint of difficulty in swallowing. Two years previously she had been seen in a hospital outpatient department with a similar complaint. At that time a diffuse, soft enlargement of the thyroid was found, the cholesterol concentration was 172 mg/100 ml, and a latex fixation test for thyroid antibodies was negative. Thyroxine 0.5 mg daily was given as treatment for the goitre. Six months later the gland was normal in size and the thyroxine was discontinued.

Family history and system review were non-contributory except for dysmenorrhoea, for which she occasionally took aspirin. Physical examination showed a firm and slightly enlarged thyroid gland as the only significant finding.

Laboratory Investigation

Haemoglobin concentration was 8.8 g/100 ml; PCV 30%; MCHC 30% and reticulocytes 0.9%. The blood smear showed anisocytosis and hypochromia. Serum iron concentration was 30 µg/100 ml. Her blood group was O Rh-negative and non-secretor. A Coombs test was negative. Sternal marrow showed normoblastic erythropoiesis, with the later cell series manifesting both defective haemoglobinization and poorly developed cytoplasm. Granulopoiesis and megakaryocytes were normal and there was no excess of reticulum cells, plasma cells or lymphocytes. Abnormal cells were not seen. Iron stores were noted to be absent. A Schilling test and the urinary FIGLU (formiminoglutamic acid) were both within normal range. Fasting blood sugar, cholesterol, urea, electrolytes, blood folate, calcium, phosphate, liver function tests and a protein electrophoretic pattern were all within normal limits. Stools were consistently negative for occult blood. An exchange resin test (Diagnex) showed adequate gastric acid output. Thyroid antibodies were present (Table I), suggesting a diagnosis of Hashimoto's thyroiditis. Protein-bound 125I uptake was within normal range. A barium swallow and cine fluorogram showed a postcricoid web. Thoracic inlet films showed no tracheal compression. The oesophagus and stomach appeared normal on oesophagogastroscopy.

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<tr>
<th>TABLE I. AUTO-ANTIBODIES PRESENT</th>
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<td><strong>Thyroid</strong></td>
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<td>Thyroglobulin tanned cell agglutination titre</td>
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<td>Colloid (immunofluorescent)</td>
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<td>Cytoplasmic (complement fixation titre)</td>
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<td>Gastric parietal cell</td>
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<td>Complement fixation titre</td>
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<td>Non-organ specific</td>
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<td>Antinuclear factor</td>
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Treatment

Treatment with oral iron and thyroxine 0.3 mg daily was started. After 6 months the iron was discontinued. One year later the patient was still complaining of dysphagia and a barium swallow showed the postcricoid web to be unchanged. Laboratory investigations showed a haemoglobin value of 12.3 g/100 ml; MCHC 33%; serum iron 43 µg/100 ml and total iron-binding capacity 408 µg/100 ml. Thyroid antibodies (Table I) showed no marked change. A gastric mucosal biopsy (Crosby capsule) showed a marked excess of plasma cells, some of which contained Russell bodies, indicating a degree of chronic gastritis. A thyroid biopsy specimen showed unequivocal evidence of Hashimoto's thyroiditis on microscopic examination. Urinary oxosteroids and oxogenic steroids were within normal limits. The patient continues on thyroxine and intermittent oral iron therapy at the present time.
DISCUSSION

This patient manifests anaemia, sideropenia, postcricoid web with dysphagia, Hashimoto's thyroiditis and chronic gastritis. Only a minority of patients with iron deficiency anaemia and chronic gastritis demonstrate parietal cell antibodies. Those with antibody present are likely to develop pernicious anaemia if histamine-fast achlorhydria is also present. This patient had gastric acid on indirect testing. The situation regarding acid is important, because if the patient has iron deficiency anaemia and histamine-fast achlorhydria, the chances of pernicious anaemia developing are 13%, rising to 32% if the antibody test is positive. Those patients with iron deficiency anaemia who have free acid, show an incidence of gastric parietal antibody no higher than in normal controls.

The place of thyroiditis in this complex is equally interesting. The incidence of antithyroglobulin antibodies is increased in patients with atrophic gastritis, and there is a relationship between thyroiditis and pernicious anaemia. These publications also point out the relationship of iron deficiency anaemia and pernicious anaemia which requires comment: complement-fixing antibodies to gastric mucosa are increased in Hashimoto's disease, primary hypothyroidism, thyrotoxicosis, iron deficiency anaemia and diabetes mellitus, but only a minority of patients with iron deficiency anaemia and chronic gastritis demonstrate parietal cell antibody—and it is those with antibody who are likely to develop pernicious anaemia if histamine-fast achlorhydria is present. There is obviously sufficient evidence to implicate an association between chronic disease of the stomach and thyroid gland, and an undoubted connection exists between chronic thyroiditis and pernicious anaemia. Presumably, though, the position regarding antiparietal cell antibody and gastritis is not the same as that which arises with thyroid antibodies and thyroid disease. Probably 'chronic gastritis'—and particularly that related to iron deficiency anaemia represents a mixed group of disorders.

The postcricoid (upper oesophageal) web remains enigmatic. Its histological appearance is unremarkable, usually showing a normal epithelium lying on a connective tissue stroma, with occasionally minimal evidence of chronic inflammation. Jacobs and Kilpatrick re-examined the relationship between iron deficiency anaemia and web, and noted that the response of the dysphagia to treatment with iron is ambiguous. Even with symptomatic improvement the X-ray findings are unchanged. Similarly, the gastric atrophy is not reversed by treatment with iron. Chisholm et al. studied 72 patients with postcricoid web and noted that in all but 9 patients there was associated iron deficiency anaemia and that there was a significant increase in thyroid antibodies in patients with a postcricoid web when compared with an iron-deficient control group without web.

The association with thyroid disease and the increased incidence of several auto-antibodies in patients manifesting iron deficiency anaemia—especially those with webs—suggest the possibility that an auto-immune process may be responsible for the development of the web when associated with the anaemia. An auto-immune process involving oesophagus, thyroid and stomach is not unexpected if one recalls their common embryological foregut origin.

In practice, the dysphagia will relent in a fair proportion of patients with a small web once the anaemia is corrected, though the web is usually still demonstrable on X-ray. Relapse of anaemia is often associated with exacerbation of symptoms. Large webs (or frank stricture) producing dysphagia usually require dilatation for its relief.

Finally, there remains the problem of postcricoid carcinoma. Recent studies suggest that it is the iron deficiency anaemia which is relevant, while the significance of the web in the aetiology of postcricoid carcinoma is uncertain, particularly since the carcinoma arises only rarely from the web itself, and it cannot be regarded as a premalignant lesion. The situation has recently been reviewed.

This patient will need careful observation since the risk of malignant change in the pharynx or oesophagus is real, though the time taken for malignant change to occur is not known. The disorder is persistent in any of its forms, though it obviously need not be progressive. Aside from correction of anaemia and sideropenia, no treatment appears to be specific. The proposal that longstanding iron deficiency is related to the risk of malignant change demands continued observation of blood count and serum iron, and barium swallow should dysphagia reappear or worsen. The absence of both parietal cell antibodies and hypo- or achlorhydria makes it likely that this patient will develop neither pernicious anaemia nor gastric carcinoma. The Hashimoto's thyroiditis should remain well controlled on thyroxine. Apparently no patient has been treated with either steroid or an immunosuppressive agent, though from the clinical manifestations and laboratory findings in a proportion of these cases, the choice of long-term immunosuppression would seem not unreasonable.

REFERENCES