ANTERIOR HYPOPHYSITIS AND HASHIMOTO'S DISEASE IN A YOUNG WOMAN

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(Plate CLXIII)

Hashimoto's disease is rarely fatal and very little is known about the necropsy findings in early cases. The following case, though incompletely studied, is of interest in as much as the patient was young, had Hashimoto's disease, and was found at necropsy to have very marked lymphocytic infiltration of the pars anterior of the pituitary.

CASE REPORT

A housewife aged 22 yr was admitted to hospital with a two days' history of severe lower abdominal pain radiating to the right iliac fossa, frequent vomiting, and diarrhoea. An acutely inflamed gangrenous appendix which had not ruptured was removed. Eight hours after the operation the patient developed peripheral circulatory failure and quickly died.

The patient had two children aged 3 yr and 14 months and there had been no obstetrical complications. She had no difficulty with lactation, but she had had only two scanty menstrual periods since the birth of her second child, the last 6 months before death. For a year she had felt increasingly tired and listless, and her thyroid gland had been increasing in size; for these symptoms she had been receiving thyroid extract from her general practitioner.

Necropsy findings

The body was pale but well nourished. Hair distribution was normal, and no abnormal pigmentation was present. The operation site showed the appearances that would be expected after a successful appendicectomy.

The pituitary was smaller than normal. The thyroid gland was enlarged (100 g.), firm, lobulated, and peach-coloured. The adrenal glands, though looked for, were not found and were presumably markedly atrophic. No significant abnormality was found in the other organs.

Microscopic examination

Only the thyroid, pituitary and ovary were kept for microscopic examination. Thyroid. There is diffuse round-cell infiltration of the gland with lymphocytes and plasma cells in approximately equal numbers. A few true lymphoid follicles are present (fig. 1). The thyroid vesicles are small and most do not contain colloid; numerous giant cells and macrophages with reniform nuclei are present within the vesicles. The thyroid epithelium consists mainly of large pale pink cuboidal cells with granular cytoplasm, but a few deeply eosinophilic cells are also present; nuclear aberration of the epithelium is not conspicuous (fig. 2). A few larger vesicles containing pale-staining colloid with peripheral
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Fig. 1.—Thyroid. Diffuse round-cell infiltration, lymphoid follicle, and absence of colloid. Azan and eosin. × 50.

Fig. 2.—Thyroid. Small follicles lined in places by Askanazy cells and containing giant cells. The round cells are lymphocytes and plasma cells. H. and E. × 230.

Fig. 3.—Anterior lobe of pituitary. Diffuse micronodular infiltration with focal aggregates; glandular elements atrophied and almost unrecognizable. H. and E. × 50.

Fig. 4.—Anterior lobe of pituitary. Atrophic acini composed of small epithelial cells; extensive interstitial lymphocytic infiltration. H. and E. × 360.
vacuoles are present and in these the epithelium is columnar. Fibrous lobulation of the gland is present. These appearances are diagnostic of Hashimoto's disease.

Pituitary. This organ was unfortunately damaged during removal and it has not been possible to examine full sections in the horizontal plane. The pars posterior and capsule are normal. The pars anterior is reduced to about half the normal size and is fairly extensively infiltrated by lymphocytes, which form diffuse sheets surrounding atrophic acini, and in places more crowded darkly staining aggregates (fig. 3). Some of the aggregates have paler centres and may be true lymphoid follicles, but few reticulum cells can be recognised confidently, and mitotic figures are rare. Where lymphocytic infiltration is most severe the heavy regular reticulin pattern is replaced by a patchy network of fine fibres. No giant cells and few plasma cells are to be found in the pars anterior, and there is no fibrosis. The glandular acini are shrunken in the areas of lymphocytic infiltration and the epithelial cells are small (fig. 4). Nearly all the mucoid cells are of intermediate type, and the acidophils are much less granular than normal. In the pars intermedia the colloid vesicles are well filled and some contain a few mononuclear phagocytes; in the surrounding tissue lymphocytes and plasma cells are present in moderate numbers.

Ovary. Primordial follicles and Graafian follicles are present, but no luteal cells. The stroma appears normal.

DISCUSSION

The clinical history of this patient suggests progressive hypopituitarism with death from adrenocortical insufficiency provoked by acute appendicitis and a surgical operation. The findings in the pituitary are consistent with this view.

There are two remarkable aspects of this case. First, the occurrence of goitre is rare in hypopituitarism: none of the cases of Sheehan and Summers (1949) had goitre though changes resembling Hashimoto's disease were found in a proportion of their normal-sized and atrophic thyroids. Second, the lesion in the pars anterior of the pituitary is most unusual in appearance; it seems not to be an example either of healed postpartum pituitary necrosis or of giant-cell granuloma of the pituitary. The extent of the round-cell infiltration in this case is greatly in excess of that found infrequently and incidentally at necropsy (Zanchi and Dova, 1950; Shanklin, 1851).

It seems reasonable to assume that the coexistence of these two unusual findings is not fortuitous. Both may be explained by the onset of auto-immune reactions to pituitary and thyroid antigens released during the puerperal involution of these glands.

SUMMARY

The thyroid of a woman of 22 who died 8 hours after an uncomplicated operation for appendicectomy and 14 months after the birth of a child showed the changes characteristic of Hashimoto's disease. The anterior pituitary showed extensive lymphocytic infiltration and atrophy. The suggestion is made that the changes are auto-immune reactions to the release of pituitary and thyroid antigens during puerperal involution of the glands.

We are indebted to Professor Andrew Allison, who performed the necropsy at the request of the Procurator Fiscal, for permitting us to examine the tissues from this patient and to Mr J. P. Fleming for access to the clinical records.

REFERENCES