Endocrine Exophthalmos

The severity of the systemic symptoms of hyperthyroidism in Graves's disease often differs considerably from the severity of the ocular disturbances. The accumulation of clinical evidence, such as the occurrence of exophthalmos in association with pretibial myxoe dema and the apparent increase in severity of exophthalmos after thyroideectomy, led to the concept of specific pituitary factors causing exophthalmos without stimulation of thyroid gland, but it was not until the development of biochemical, radioassay, bioassay, and immunoassay techniques that these clinical impressions began to receive support. Though the prime aetiological mechanism is still not clearly understood, recent work has gone some way towards clarifying the biochemical dysfunction in endocrine exophthalmos, and clinical assessment of the condition has become more accurate. Unfortunately drug treatment remains unsatisfactory. Though decompression of the orbit is at times necessary, debate continues over the surgical technique that should be used.

Patients with exophthalmos which proves to be endocrine in origin may be clinically hyperthyroid or euthyroid. There is evidence that the eye symptoms of Graves's disease such as stare, soreness, watering, lid retraction, lid lag, and delayed blinking are due to excessive activity of the thyroid hormone, whereas pure exophthalmos or the measured exophthalmos accompanying these symptoms is caused by pituitary factors. The separation between these factors becomes relevant because some authors have doubted whether true exophthalmos occurs in pure thyrotoxicosis. Certainly such patients rarely have a degree of exophthalmos which demands surgical decompression. A. N. Bowden and F. Clifford Rose, reviewing 50 patients referred to a medical ophthalmology unit with the eye symptoms of "Graves's disease," noted exophthalmos in 46, but other symptoms such as lid lag and lid retraction in as many patients, a remarkably high incidence of these in view of the ophthalmological and neurological bias of the referrals. Twenty-four patients were euthyroid on the basis of the Wayne Clinical Index, though in six of these patients hyperthyroidism was detected on the basis of iodine-131 uptake or serum levels of protein-bound iodine-131. This substantiates the view that true endocrine exophthalmos occurs in the absence of clinical or biochemical evidence of hyperthyroidism.

Evidence suggests that the pathological changes in the orbital tissues found in endocrine exophthalmos are due to pituitary rather than thyroid factors. These include an exophthalmos-producing substance and thyroid-stimulating hormone. The triiodothyronine-suppression test, which measures the normal suppression of thyroid gland activity (radioiodine uptake) by the administration of a thyroid hormone (triiodothyronine) and which depends on inhibition of the production of thyroid-stimulating hormone by the pituitary, is used as a measure of autonomy of the pituitary in abnor mal states. Many authors have found the triiodothyronine-suppression test to be abnormal in euthyroid patients with endocrine exophthalmos, thus lending support to the concept of these pituitary hormones being directly responsible for the exophthalmos. A third hormone, long-acting thyroid stimulator, has been thought to play some part in the production of endocrine exophthalmos, but the evidence for this is at present inconclusive and from several authors conflicting. Further support for the existence of a pituitary mechanism is obtained from the observations that, firstly, exophthalmos often begins after successful ablation of the thyroid gland, and, secondly, after iodine-131 treatment for thyrotoxicosis the exophthalmos tends to increase although the lessening of lid retraction may improve the ocular appearance. Rarely the exophthalmos attains "malignant" proportions, the increase in exophthalmos being greatest by the end of the first year after iodine-131 therapy. Thereafter the condition may remain static and later recede slowly. The pathological changes within the orbit include inflammation and oedema of the connective tissue, fat, and muscles, and these are probably due to an increase in the mucopoly saccharides of the connective tissue ground-substance.

The treatment of endocrine exophthalmos by drugs or thyroid surgery remains unsatisfactory. Total ablation of the thyroid by surgery or radioiodine has been suggested on theoretical grounds, but it does not relieve or halt visual deterioration. In these circumstances patients may be given a trial of corticosteroids in high dosage, but there is no way of predicting whether they will be effective. The natural history of the condition is very variable, and if deterioration in visual acuity has already occurred vision may be lost irretrievably while awaiting the effects of steroid therapy. To-day, therefore, it is wiser to consider orbital decompression as soon as any loss of visual acuity occurs which is not relieved by lateral tarsorrhaphy. The decision has become easier with the development of the transantral operation.

This has now largely replaced decompression by removal of the orbital roof through a frontal craniotomy.

In series reported so far, the complications have been few, and the transantral route appears to be the one of choice in the management of endocrine exophthalmos, to be employed early when loss of visual acuity occurs.

Pelvic Sepsis

Sepsis in the retroperitoneal tissues or in the pelvic bones in childhood is uncommon. In either condition the main presenting symptoms may be pain in the hip, pyrexia, and malaise. Osteomyelitis of the upper femoral metaphysis or septic arthritis of the hip may be suspected because of painful limitation of movement of the hip.

A. W. March, L. H. Riley, and R. A. Robinson describe the clinical findings in 14 children with retroperitoneal abscess and 20 patients with septic hip disease seen at the Johns Hopkins Hospital between 1946 and 1970. Though fever, hip pain, and limp were outstanding symptoms in both groups of patients, abdominal pain and back pain were more frequent symptoms in patients with retroperitoneal abscess. In retroperitoneal abscess the painful limitation of movement of the hip was greatest when the hip was abducted, extended, and medially rotated, the position in which the psoas and iliacus are put under tension.