TRAUMATIC HETEROPHORIA

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For some time past the frequency of cases of accident that have resulted in the victims suffering from heterophoria has impressed me. That the percentage of cases should be high is not surprising when one considers the delicacy and nicety of the contractions required to rotate the eyes while maintaining binocular fixation. It has often been demonstrated physiologically how hesitantly and clumsily the eyes move up and down compared with the easy assured movements from side to side. The movement of the eyes about a horizontal frontal axis is very much more complicated than rotation about a vertical axis, in which the muscles concerned are solely the medial and lateral recti. In elevating or depressing the eyes the obliques as well as the superior and inferior recti are concerned, and their interaction is more complicated and more easily liable to derangement. The consequences of their malfunction are more immediately obvious clinically than the other "phorias," because, as a rule, the individual seems to be peculiarly sensitive to, and intolerant of, even a small degree of hyperphoria or hypophoria.

It is a curious reflection on the onward march of civilization that to-day the non-adventurous stay-at-home citizen is more exposed to the risk of injury or death by violence than his forefathers in ruder times. The number of persons involved in accidents in this motoring age grows every year. These accidents often result in severe head injuries, fractures, or concussion. The shock and the local disturbance due to the actual impact must often be sufficient to upset the delicate balance of the muscles controlling the eye resting on its bed of fat in the orbit. Heterophoria would then result. The patient, in severe cases, would complain of diplopia. In less serious cases headache, difficulty with reading, and "tiredness" of the eyes would be the main complaints.

The following cases are quoted from my private practice, and therefore from a very limited group and not by any means promising material amongst which to search for cases of traumatic heterophoria. Were one considering the cases seen at a large general hospital with a very busy casualty department one would be prepared to find the condition of heterophoria caused by physical injury infinitely more often.

The patients were examined for muscular imbalance by means of the British refracting unit, which enables one to read off directly the degree of the hyperphoria (treating each case as being a hyperphoria and not a hypophoria) of the eye concerned as well as any existing degree of esophoria or exophoria.

Case 1.—This patient was assaulted with a stone and sustained fractures of the left orbit; complained of diplopia in all directions, and headache, etc.

Left hyperphoria= $1\frac{1}{2}$ degrees. Esophoria=5 degrees.

Candle test—the images were never inclined.

Progress—a year later—left hyperphoria= $\frac{3}{4}$ degree, and esophoria=2 degrees.

Case 2.—Sustained a fracture of the posterior part of the skull in a motor accident. Complained of diplopia in every direction.

Candle test—the images were never inclined.

Left hyperphoria=5 degrees. Esophoria=6 degrees.

Progress—a year later—left hyperphoria= $2\frac{1}{2}$ degrees, and esophoria=3 degrees.

Case 3.—After a fracture of the skull in a motor accident complained of diplopia, headaches, etc.

Left hyperphoria=10 degrees. Esophoria=10 degrees.

Progress—four months later—no hyperphoria, no esophoria.

Case 4.—This patient was kicked by a horse and complained of headaches, especially on reading.

Left hyperphoria=1 degree. Esophoria= $3\frac{1}{2}$ degrees.

Progress—a year later—no hyperphoria.

Case 5.—This patient was thrown off a motor-cycle and fractured the roof of the orbit and the base of the skull; complained of diplopia in all directions, headaches, etc.

Candle test—the images were not inclined.

Right hyperphoria=1 degree. Esophoria=10 degrees.

Progress—four months later—no hyperphoria; esophoria=4 degrees.

Case 6.—His ambulance fell down a mountain-side, and his chest was crushed, and there were fractures of several ribs and an arm. He complained of diplopia at times, headaches, and difficulty with reading.

Left hyperphoria=1 degree.

Progress: Two months after the accident left hyperphoria= $\frac{1}{2}$ degree.

Points of Interest in the above Series

1. The eye movements were intact, and there was no paralysis of eye nerves in spite of the severity of the head injuries. In two cases (Nos. 1 and 2) the condition was diagnosed elsewhere as a muscle paralysis. On examining by the candle test, with red and green glasses respectively before the eyes, these two patients, as well as patient No. 5, never saw the two images inclined at an angle towards or away from each other. The inclination of the two images is characteristic of a paralysis or a paresis of an eye muscle, and its total absence practically rules out the diagnosis of "paralysed muscle."

2. These patients (Nos. 1, 2, and 5) also complained of diplopia on looking in every direction. This complaint, too, practically excludes the possibility that the condition is one of paralysis. (In total external ophthalmoplegia there is no movement of the eye.)

3. There was no anatomical lesion found causing the heterophoria except in Case 1, where the lateral tuberosity had been driven inwards into the orbital cavity, thereby disturbing the suspension of the eye.

4. The tendency of the traumatic heterophoria is to improve.

5. In no case does there appear to be any suggestion of the development of a concussion cataract.

6. Heterophoria due to trauma is not mentioned in the textbooks.

Sir Kingsley Wood, Minister of Health, will preside over the Health Congress of the Royal Sanitary Institute to be held at Southport from July 6th to 11th. The deliberations of the congress will be divided among seven sections, dealing with: preventive medicine; engineering, architecture, and town planning; maternity, child welfare, and school hygiene; veterinary hygiene; national health insurance; hygiene of food (in conjunction with the Food Group of the Society of Chemical Industry); and tropical hygiene. In addition, there will be conferences of representatives of sanitary authorities, medical officers of health, engineers and surveyors, sanitary inspectors, and health visitors. The sections and conferences into which the Congress is divided will discuss the following matters: The future of the isolation hospital; the salaried midwives' scheme; public dental services; child guidance; the health visitor's work in relation to a reduction in maternal mortality; the health services of Scotland; extensions of national health insurance; tropical hygiene; the new draft Public Health Bill; food package and the consumer; abattoirs and meat inspection; the accredited milk scheme; milk distribution and its problems; sanitary law and practical administration; atmospheric pollution; overcrowding and the Housing Act, 1935; house refuse collection and disposal; housing and planning; the sanitation of flats.