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RECURRENENT HEADACHES IN CHILDREN.

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HEADACHES are of such common occurrence in young people that no physician whose observations are made largely among children, can fail to meet with many cases in which headache is the main subject of complaint. In dealing with this group of cases from a scientific point of view, it is evidently necessary to define the physical conditions which may be taken as signs of that mobile or irritable condition of the nervous system in which headaches are so common.

The study of diseased conditions of the brain has been greatly advanced by observing the conditions of the muscles of the face, eyes, limbs, trunk, &c. It is by the clonic muscular twitchings in chorea that we know the brain is choreic; it is by the condition of hemiplegia we are led to infer that there is a lesion in the basic ganglia of the opposite hemisphere; it is by the observation of labio-glosso-laryngeal paralysis that we diagnose disease of the olivary body. If, then, we would conduct our observations in the case of children who suffer from recurrent headaches on principles and lines of investigation similar to those which have led to important results in the study of chorea, hemiplegia, and other cases of organic disease, we must carefully observe the condition of the muscular system in such patients. Following upon these lines of argument, I have in many cases examined and recorded the conditions of muscles supplied by cranial nerves, and those of the upper extremities.

It is a matter of common observation that a patient may "look as if he had a headache."

Such an appearance of the face can only result from its colour, form, or mobile conditions, for these are its only distinguishing characteristics.

In children it is not uncommon to have "the expression of headache in the face;" so frequently was it observed, that I came to look upon it as a physical sign of the condition which produces headache.

A face may be analysed as to the three properties spoken of, and that as to either half of the face, or as to the upper, middle, or lower portions. If either vertical half of the face be covered in turn by a paper, "the expression of headache" is seen equally on each side, proving that the cause of the expression is bilaterally symmetrical. If the paper be held with one margin horizontal it may be made to cover in succession, (1) the forehead down to the level of the eyebrows; (2) the parts about the eyes from the eyebrows to the lower margins of the orbit; (3) the parts from the lower margin of the orbits downwards, including the mouth, cheeks, and *alæ nasi*.

In analysing faces to see wherein lay "the expression of headache," I looked at the faces of adults, and the expression seemed retained as long as the parts about the eyes were seen and lost when the middle zone was covered, i.e. this peculiar facies appeared due to the condition of the parts about the *orbicularis oculi*. There seemed to be a loss of tone in this muscle; there was an appearance of fulness and flabbiness about the lower eyelid; the skin hung too loose, and in place of falling against the lower eyelid neatly, as a convex surface, it fell more or less in a plane from the ciliary margin to the lower margin of the orbit. This condition is often seen best by looking at the patient's face in profile. This condition of the parts about the eye may often be seen in children, unaccompanied by any general change in the skin of the face, such as the flabbiness seen in emphysema, and the loose inelastic skin of senile decay. The expression is not due to local œdema, for it does not pit, and may often be removed instantly by causing the expression of joyousness or laughter, when the orbicular muscle is energised and temporarily recovers its tone.

More might be said of this antithesis of the muscular state in the opposite conditions of the centres of feeling. It is not suggested that the appearance of the face accompanies headache only, it is common in many conditions of depression.

Something might also be added of the partial ptosis and pigmentation of the lower eyelid sometimes seen.

The muscular condition of the hand in such patients seems to me equally characteristic with that of the face. There is a nervous condition of the hand, as there is a nervous condition of the face, and each can be described in anatomical terms. As the child stands up, holding his hands out before him on a level with the shoulders, palms downwards, and fingers spread out, there may often be seen a peculiar and, I think, characteristic condition of the hand. The wrist droops slightly, at the same time the phalanges are extended backwards upon the metacarpus, the second phalanges being slightly flexed, and the unguis phalanx either flexed or in a straight line with the middle phalanx. The thumb is usually simply extended backwards and somewhat abducted from the fingers. I think that this position of the hand may be taken as an item of evidence that the child is of a neurotic habit, with mobile nerve-centres; it may be seen in girls convalescent from chorea, and in others who are weak and nervous. This "nervous hand" is sometimes seen more marked on the left than on the right side. I have now under observation a lad and a man, both the subjects of partial hemiplegia apparently from organic disease, in whom this "nervous hand" is well seen on the weak side. Twitchings of the fingers were very commonly seen, the movements being usually of independent digits, and most commonly either lateral or flexor, less commonly extensor; the lateral movements appeared the most characteristic.

Believing that "the nervous hand" was owing to the condition of its muscles, and that the condition of its muscles was owing to the condition of certain nerve-centres, the conclusion arrived at was that the position of the hand must indicate the condition of those nerve-centres.

Considering the illustrations that Darwin has brought forward to prove that the emotions are expressed by the exercise of certain muscles, and that in opposite emotional conditions (i.e. opposite conditions of nerve-centres?) the antithesis of the emotional condition is expressed by an antithesis of the muscular condition, my observations were directed by this principle of antithesis.

A hand almost the antithesis of "the nervous hand," and

expressive of force and energy, is often seen in men when speaking earnestly. Here the wrist is extended, the metacarpo-phalangeal joints and interdigital joints are flexed, the thumb is also moderately flexed.

It is of course the 7th cranial nerve which connects the facial muscles with their nerve-centres. If the centres of the 7th nerve are disturbed in conditions of depression it is reasonable to inquire if the muscles supplied by other cranial motor nerves show any signs of relaxation or disturbed equilibrium.

The 3rd, 4th, and 6th nerves supply the eye muscles. Evidence of disturbance of the motor division of the 5th nerve is seen in the great frequency of tooth-grinding. In a large proportion of my cases, the teeth were found flattened upon their edges, as the result of tooth-grinding. This condition may, I think, be taken as another physical sign of the nervous condition. We know that the sensory branches of the 5th nerve are largely distributed to the meninges.

The tongue is supplied by the 9th nerve, and this when protruded was usually very unsteady, but not distinctly jerked in and out as in chorea.

There appears to be some evidence of disturbance of the pneumogastric nerve in the varying condition of the appetite, which is often voracious, often very poor; vomiting may accompany or succeed the headaches. Illusions of sight with headaches, such as sparks, colours, hemiopia, &c., are in my experience much more rare in children than in adults.

I found that very commonly the urine was of high specific gravity, reaching up to 1030 or 1035, and loaded with urea. Uro-hæmatin was also usually abundant; in both these facts these children correspond with those suffering from chorea.

Fifty-eight cases were arranged in a tabular form, as follows, showing the relations to age and sex:—

AGES.	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-15
Males 25	1	2	2	8	2	1	2	2	4	1	0
Females 33	0	2	3	1	2	5	5	4	2	4	5
Totals 58	1	4	5	9	4	6	7	6	6	5	5

Heredity produced a marked predisposition to this neurotic condition; in the 58 cases there was a history of recurrent headaches in the mother in 24 cases, in the father in eight cases, while in three cases there were examples of insanity in the family. In looking at the faces and heads of children suffering from headaches, I found in many cases signs of rickets, and when in the general clinique of children the patient was seen to be rickety, headaches were found in most instances; it seems then that rickets in childhood is a strongly predisposing cause of recurrent headaches.

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