TWO CASES OF HEAD-NODDING IN INFANTS.

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THIS disorder is, perhaps, of sufficient rarity to make the following notes of two cases worth recording.

CASE I.

Male child, 4 months old, brought on February 26th with complaint of nodding of the head and twitching of the eyes.

Parents are healthy and have had no nervous diseases. At birth the baby was healthy, but after the first week it was bottle-fed, and when seen at 1½ months old was very thin, shrivelled, and weak. There was no digestive disorder, but it was having a very weak milk and water mixture, and on the proportion of milk being raised it soon improved and put on flesh.

The head-nodding was first noticed at the beginning of February, the baby being then 3 months old; the twitching of the eyes was not noticed till one or two weeks later.

The child is now plump, but small and pale; when sitting and holding its head up, the head usually nods, with a monotonously regular forward and backward motion and very occasional jerk to the left side; sometimes the head is kept still for about half a minute, and it is usually still when leaning against some support, or when the gaze is fixed intently on some object. There is nystagmus in both eyes, but more in the right one; it is in a horizontal direction, and the optic axes remain parallel. Contrary to the nodding of the head, the nystagmus is much increased when the gaze is arrested by something bright. The mother says it is usually absent for a few minutes on waking after a good sleep; otherwise it is almost constant.

The mother complains that it cries a great deal, is frequently sick, and is constipated; it is fed at intervals of two hours, and has its milk "diluted" with strong barley water.

Two grains of phenazone were given daily, at first in ½-grain and later in 1-grain doses, and suitable alterations in the feeding were suggested.

March 22nd. Nystagmus much less; head-nodding quite as much as before, but now more horizontal and less in the sagittal direction. It cries very much less and is not sick.

There was no nystagmus noticed after April 4th, and no head-nodding after April 7th. When seen a week later there were no signs of any teeth coming through.

CASE II.

Female child, 18 months old, brought on March 23rd with complaint of nodding of the head and twitching of one eye.

The mother is epileptic; she is 29 years of age, and has had fits about once monthly for about eight years; her memory is considerably impaired. Father healthy.

The child has been previously healthy, except for some inflammatory condition of the left eye a few months ago, after which the twitching of the eye and head-nodding was noticed. The precise date of onset could not be ascertained, except that it was after Christmas.

The child is big and firm, walks well, and has no sign of rickets; it has all its teeth, except the back double ones. It has been breast-fed, but now has a mixed diet, and has no digestive trouble except constipation.

As a rule, her head is kept still; but occasionally, when she was sitting quietly on her mother's knee, it would nod in a horizontal direction, being pulled round more to the left than to the right side; this would last for half a minute and then stop. The eyes seem quite steady, but when the gaze is directed to the right there is nystagmus in the left eye in a horizontal direction. No nystagmus was observed in the right eye in any position.

Some treatment was directed to remedy the constipation, but none for the head-nodding.

A fortnight later the condition, especially the nodding of the head, was rather more marked, and in another fortnight it was practically the same, but the condition vanished about April 29th.

It was suggested by Henoch that the disease might be of reflex origin, a result of dentition, but neither of these cases lends any support to that view, as their cessation was not marked by any eruption of teeth and the first case was evidently not yet entering on the period, while the second was almost at its close. Rickets has also been suggested as a causative factor, but it was certainly absent in these cases. Raudnitz and J. Thomson have contended that it is due to the dim light in which these babies are living and trying to use their eyes, and this theory fits these two subjects well: the seasonal incidence, in the darkest months of the year; the environment—both these babies lived during the day in dark ground-floor rooms, with one window facing east, but shut out from most of the sky by tall buildings within a few yards, and neither baby was often in the open air. So far as one could find out the two had never been in contact, but their homes were less than 50 yards apart.

One could not be sure that the treatment by phenazone did anything to lessen the duration of the disease; from the time they came under observation both cases ran a course of between five and six weeks.

CLONIC SPASM OF THE DIAPHRAGM ASSOCIATED WITH A CERVICAL RIB.

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I CAN find no case of clonic spasmodic contraction of the diaphragm recorded, except as part of the condition known as hiccough, from which this case differed, in that the glottis remained open during the spasm. Having the two very rare conditions of diaphragmatic spasm and a large palpable cervical rib coexisting in one patient, the probability that one condition stood in some relation to the other is very great indeed.

An anaemic, undersized girl of 16, markedly neurotic, first presented herself on account of a hard lump in the left posterior triangle of the neck, which she said had appeared lately. It was thought that this was probably a cervical rib, but, in the absence of an *x*-ray examination, an absolute diagnosis was not made. There were then neither pressure symptoms nor scoliosis, so that no operative treatment was recommended.

Three weeks later, following over-fatigue, the patient was seized suddenly one night with clonic spasm of the diaphragm—a sudden violent contraction, sometimes reduplicated, with each inspiration, exactly like hiccough, except that, owing to the absence of laryngeal spasm, there was not the characteristic "hic" sound of that condition. The spasm, which persisted day and night, was very severe—sufficiently so as to shake the bed in which the patient lay. It was practically uninfluenced by treatment—bromide, belladonna, chloral, even morphine under the skin, giving no, or merely transient, benefit. At the end of a fortnight the patient being in a miserable condition, apparently in danger of losing her life from weakness and loss of sleep if the spasm continued, it was decided to operate, the diagnosis being cervical rib causing irritative pressure on the phrenic nerve.

The lump was found to be a cervical rib running almost vertically downwards and forwards beneath, and parallel to, the inner border of the left trapezius. Across its anterior surface passed the cords of the brachial plexus, which were carefully separated and drawn aside. It was then possible, by working an elevator round the bone, to separate it from the dome of the pleura behind, and to remove the whole body of rib in its periosteum, about two inches in length, from its articulation with the transverse process of the seventh cervical vertebra above to its cartilaginous junction with the upper surface of the first rib below. The phrenic nerve was not recognized during the operation.

The patient made a good recovery. The spasm of the diaphragm ceased as she passed under the influence of ether, and has never returned during the two years that have elapsed since the operation.

There would appear to be two ways in which a cervical rib might cause diaphragmatic spasm: (1) By pressure on the vagus in the neck, causing a reflex contraction, much as derangement of the stomach may produce the ordinary hiccough by irritation of the terminations of the vagus in the gastric mucosa; or (2) by so exalting the normal impulse regularly passing down the phrenic nerve to produce the usual inspiratory contraction of the diaphragm by direct irritative pressure on that nerve trunk as to produce a violent spasmodic contraction of the muscle. The latter appears to me to be far the more probable explanation. The vagus in the carotid sheath lay some distance internal to the cervical rib, whereas the phrenic nerve in its course along the anterior surface of the scalenus anticus muscle must be exposed to pressure of a large cervical rib near the articulation with the scalene tubercle of the first rib.

The fact that removal of the rib, alone of the treatments tried, was directly followed by cessation of the spasm is another argument that this latter was probably caused by pressure of the rib, even remembering that *post hoc* is not always *propter hoc*, and that the administration of ether and the moral effect of the operation might conceivably have something to do with the cessation of the spasm. Whether the spasm was merely associated with the abnormal rib or whether the latter caused the former, as in all probability it did, this case, as far as I can trace the cases of cervical ribs in the *Index Medicus*, is unique. There are a number of cases of atrophy of the intrinsic muscles of the hand from pressure of a cervical rib on the