NOTE ON THE PECULIAR NYSTAGMUS OF
SPASMUS NUTANS IN INFANTS.

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In most cases of head-shaking, or spasmus nutans, in young children there is nystagmus. The close relation between this symptom and the head movements has often been pointed out; but attention seems never to have been called to some essential particulars in which it differs from all other forms of nystagmus.

Ordinary horizontal nystagmus is, of course, conjugate in its character, the antero-posterior axes of the two eyes remaining parallel to one another all the time. In this form, however, when the movements are bilateral and horizontal, the eyes incline alternately towards and away from one another; in other words, it is a convergent nystagmus. In most of the cases—perhaps in as many as two-thirds—the shaking of the eyeballs is so small in extent and so rapid that the unaided eye cannot determine the type. In those, however, in which the movements are wider and slower than usual their convergent character can be made out with ease and certainty.

The writer has for years been aware of this peculiarity, but has only recently had its unique nature and importance pointed out to him by Dr. W. G. Sym. The existence of a convergent form of nystagmus is not generally recognised, even in large and recent works of ophthalmology, nor is any reference to it to be found in books on the diseases of children.

The association of this peculiar type of nystagmus with head-shaking is not without interest in connection with the etiology of that condition. Although, as has been pointed out elsewhere,¹ rickets, deficient daylight and general weak health are important factors in its causation, spasmus nutans in infants is, at bottom, a co-ordination-neurosis. It develops during the months in which the infant is slowly learning to co-ordinate the movements of his eyes with those of his head, and it affects the muscles which have to do with these movements. Were the nystagmus which is present of the conjugate type it would not be in keeping with the other symptoms, because the conjugate movements of the eyes are of a different order altogether from those of the head-shaking. They are not movements acquired in infancy, but are in full play when the child is born; and they are not purposive in character. Those, however, concerned in the convergent type are distinctly purposive, and are gradually acquired and perfected by practice during infancy.

In those cases of spasmus nutans in which the nystagmus is rotatory, there is likewise a peculiarity in the extent and character of the movements. In the ordinary rotatory nystagmus seen under other circumstances, the movement consists of a simple rotation of the globe round its antero-posterior axis, the central point of the cornea remaining practically unaltered in position. In the rotatory nystagmus of head-shaking, however, the eye movements are more of the nature of circumduction than pure rotation. In them the central point of the cornea passes through an ellipse or some other more or less irregular rounded figure.

In conclusion, it may be pointed out that there are some other ways in which the nystagmus of spasmus nutans differs from the ordinary form. For example, it is often unilateral, instead of being very rarely so; and it is often vertical or rotatory, instead of being nearly always horizontal. The direction of the movements, also, is occasionally different in the two eyes—that is, vertical or rotatory in one eye, and horizontal (at the same time) in the other, this state of matters being never seen in ordinary nystagmus. Lastly, it is invariably recovered from within a certain number of months.

REFERENCE.

¹ On the Etiology of Head-shaking with Nystagmus (Spasmus Nutans) in Infants, Dr. A. Jacobi's *Festschrift*, May, 1900; and *Scot. Med. and Surg. Journ.*, July, 1900.

We learn from the *Hong Kong Telegraph* that the medical men of Bangkok have formed a medical association. The aims of the association are the advancement of medical science and the protection of medical interests.

A CASE OF TETANUS NEONATORUM SUCCESS-
FULLY TREATED WITH ANTITETANUS
SERUM.*

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THE greater care bestowed upon the infant at birth, together with the more general use of antiseptics in the dressing of the cord and navel, have made the appearance of this affection one of considerable rarity; but amongst the poor of our cities large numbers of women are attended by "a neighbour" or other person to whom antiseptics are unknown, so that it is not surprising if a case does occasionally occur: indeed, looking at the surroundings of many lying-in chambers, the wonder must be that more cases are not seen. As this infant was admitted into hospital under my care, I had the advantage of watching it very closely and following the progress of the case from day to day; but in addition to this I had the satisfaction of having the diagnosis confirmed by bacteriological examination by my friend and colleague, Dr. Lorrain Smith, whose report is appended.

E. H., aged 13 days, was presented for treatment at the out-patient department of the Belfast Hospital for Sick Children, Queen Street, on the morning of November 26th, 1900. She was seen by the assistant-physician in attendance, Dr. Leatham, who promptly recognised the nature of the case, and admitted her to the Medical Ward.

History.—The labour was tedious, but not instrumental; the confinement was conducted by "a neighbour," and the cord divided with the ordinary scissors of the house, and dressed with a piece of old linen, but whether this was charred or not before application the mother does not know. All went well with the child until the ninth day, when the mother observed that it could not suckle, or rather, that it was unable to fasten on the nipple; she also thought that its shoulders were "gathered up," and further, that it was inclined to keep its head back.

Anamnesis.—The child was well developed, and weighed 7 lbs. The skin and mucous membranes were healthy. The temperature was 99° F. in the rectum, the pulse 130, and the respirations normal, except during the attacks of spasm. The child was stripped, and examination revealed the following condition: The whole body seemed to be in a state of tonic spasm, and, passing from above downwards, the forehead and eyebrows were marked by transverse lines; the eyelids were tightly closed, the lips were pursed up, and deep furrows ran from the ala of the nose to the angles of the mouth. During the periods of definite exacerbations all these signs were accentuated, producing well-marked risus sardonius. The jaw was rigidly closed, so that even a spatulum could not be introduced; the sterno-mastoids stood out boldly, and the muscles of the back of the neck, the spinal muscles, and those of the abdomen were all firmly contracted. The arms were tightly drawn down to the sides, the forearms were pronated, and the thumbs and fingers were rigidly flexed into the palms. The thighs and legs were flexed at right angles, the feet were strongly arched, and in a position of equino-varus. There was well-marked retraction of the head, and, during the attacks of spasm, this retraction, added to the overaction of the spinal muscles, produced a condition of opisthotonos. The condition of extreme muscular irritability was very noticeable, so that the least touch or movement of the child was sufficient to develop at once a paroxysm of general spasm; this was well exemplified when the teat of the sucking-bottle was put to its lips, or when the child was lifted, or its position changed. The duration of the spasms varied, but generally, I should say, they lasted about half a minute. During their occurrence the baby became deeply cyanosed and cried with a suppressed cry. The respirations were apparently but little interfered with except during the actual attacks of spasm and auscultation revealed nothing abnormal. The abdominal muscles were so rigid as to preclude any satisfactory observations being made concerning the action of the diaphragm. The heart sounds were normal and the pulsations, which were easily counted through a widely-open anterior fontanelle, ranged from 160 to 170, the rate slowing down during the spasms. The umbilicus was in a very filthy condition and covered with foul smelling pus and slough. The parts round it were swollen and of a deep red colour for about half an inch. The mother was not at all clear about the cord, but she thought it separated on the fifth day, and it had not been dressed from that time till the child was brought to the hospital. Dr. Leatham took a swab from the wound at the time and sent it to Dr. Lorrain Smith for examination.

Treatment and Progress.—As this seemed a suitable case for a trial of antitetanus serum I decided to use it and it alone, and accordingly I injected on November 26th 5 c.cm. of tetanus antitoxin from the Pasteur Institute. This was done under the skin of the left abdominal wall with all due antiseptic precautions. At this time the baby was quite unable to use the feeding bottle, and it was nourished by a suitable preparation of cow's milk which was introduced at the side of the mouth and allowed to trickle into the pharynx, the head being held well back. The umbilicus was cleansed with boracic lotion and a boracic fomentation applied every two hours. I saw the baby again at 9 P.M., and its condition was not changed, except that its temperature had risen to 102.6° F., and the bowels had acted in response to a teaspoonful of castor oil. At 11 P.M. the temperature reached 104° F., at 1 A.M. it was 103° F., and at 5 A.M. 104° F. again. I visited it again at 10 A.M., and the report was favourable; the attacks of spasm were very severe each time it was fed or moved, but otherwise it seemed comfortable and slept at intervals.

November 27th, 10 A.M.—This morning the spasm of the masseters was much less pronounced, and the infant could feed from the bottle; bowels

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