

CHAPTER IX.

THE DISEASES OF THE ACCESSORY NERVE.

THE accessorius consists of two parts, both of which have a separate origin and exit. The upper one belongs entirely to the vagus, emerges with it, and is hence called accessorius vagi. The lower one begins at the level of the first cervical nerve (cf. Fig. 26), and can be traced as far down as the level of the sixth, sometimes even of the

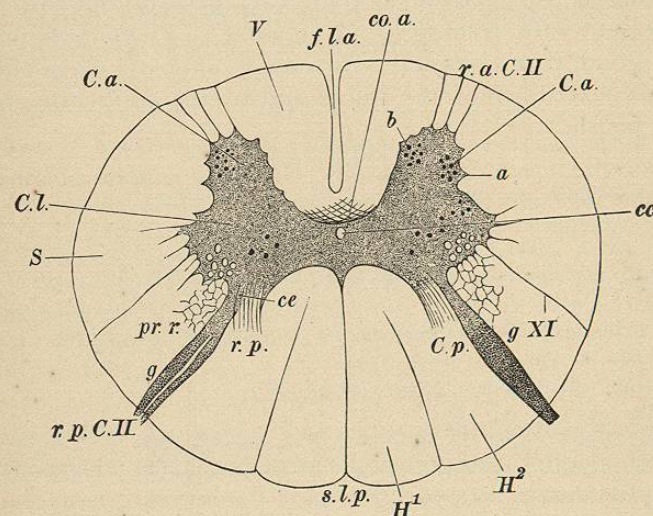


Fig. 26.—CROSS-SECTION THROUGH THE CERVICAL CORD. *r.p.C.II*, posterior root of the second cervical nerve. *XI*, fibres of accessorius. *C.a.*, anterior horn. *C.p.*, posterior horn. *C.l.*, lateral horn. *H¹*, Goll's column. *H²*, Burdach's column. *S*, lateral column. *V*, anterior column. *g*, substantia gelatinosa of posterior horn.

seventh cervical nerve roots; this is the spinal portion, the accessorius spinalis. After having passed upward to the foramen magnum, close to the cord, it unites inside the skull with the portion belonging to the vagus to form for a while a common trunk, the accessorius communis, which, soon after leaving the skull through the jugular foramen, again divides into two branches, the accessorius vagi then becoming the inner, the accessorius spinalis the outer branch.

The nucleus of the former portion has been described in the two previous chapters; that of the spinal portion is in the region of the anterior horn of the cervical cord. Since the latter is provided with motor cells, the purely motor nature of the spinal portion is evident (Schwalbe). According to Dees (Allgem. Zeitschr. f. Psychiatrie von Laehr, Bd. 43, Heft 45, 1887), the nucleus of the accessorius is divided into three portions, the upper being situated in the centre of the anterior horn, just above the first cervical nerve; the middle at the lateral border of the anterior horn from the second to the fourth cervical nerve; and the lowest at the base of the lateral horn from the fourth to the sixth cervical nerve. The large multipolar (motor) nerve cells which form the nucleus are arranged like a rosary.

We may have central as well as peripheral diseases of the accessorius, and, as is the case in other motor cranial nerves, the diseases may be of a paralytic or of an irritative nature (hyperkinesis, spasm—akinesia, paralysis).

ACCESSORIUS SPASM, SPASMODIC WRYNECK, SPASMODIC TORTICOLLIS (*Tic Rotatoire, Nickkrampf*).

Since the accessorius supplies the sterno-cleido-mastoid and the trapezius (with its posterior larger portion), it is these two muscles which present disturbances in affections of the nerve. Either of them may be affected by itself, by a clonic or a tonic form of spasm; hence there exist quite a variety of clinical pictures, especially as the disease may also be unilateral or bilateral. The sterno-cleido-mastoid is about as often the seat of a clonic spasm as the trapezius, whereas the tonic form is very rarely seen in the latter muscle.

By the rhythmical contractions of one sterno-cleido-mastoid the head is moved to one side in a very characteristic manner; the chin is turned toward the opposite (well) side and is elevated, while the ear is approached to the clavicle. Contracture of this muscle (the tonic spasm) fixes the head in this position—*caput obstipum spasticum*. If both sterno-cleido-mastoids are affected, the head is drawn alternately first to the one, then to the other side (clonic form), or it is pulled strongly forward and bent toward the chest (tonic form of the spasm).

Contractions of the trapezius draw the head backward and toward the diseased side, elevate the shoulder, and approach the scapula to the vertebral column. A tonic spasm in the same locality entails fixation of the head in this position.

A simultaneous spasm of the sterno-cleido-mastoid and the trapezius of the same side, in which the facial muscles also sometimes take part, is known to occur more frequently than an affection of both trapezii or of both sterno-cleido-mastoids alone. The directions of the movements and the positions which result from such spasms can be made out from what has been just said.

The occurrence of such affections is either in paroxysms or else we have permanent contractions, only ceasing or abating during sleep. Recovery is exceptional. All therapeutic measures, not excluding the electrical and chirurgo-orthopædic treatment, are usually unsuccessful. The thermo-cautery may be tried. Any internal medication would have to be conducted according to the principles described in the treatment of facial spasm.

The causes of the disease differ widely. Cerebral tumors, meningitis, foci of softening, as well as caries of the cervical vertebræ, new growths in the medulla oblongata, may give rise to central, while external influences, cold, etc., may give rise to peripheral affections of the nerve. There are, moreover, well-authenticated cases on record of reflex spasm in the distribution of the accessorius arising from irritation by worms, uterine trouble, fright, and other emotions. As a rule, no ætiological factor can be detected. An epileptic who came under my observation, a single woman, twenty-seven years of age, presented at times a spasmodic torticollis, the contractions being extremely violent, sometimes lasting for weeks, and again being almost entirely absent for the same length of time.

ACCESSORIUS PARALYSIS.

This very rare affection may take in one or both of the above-named muscles. Unilateral paralysis of the sterno-cleido-mastoid produces a wry position of the head, in which the chin is somewhat elevated and directed toward the diseased side. Turning of the head is difficult but not impossible, as other muscles are brought into play. Bilateral paralysis of the muscle causes the head to be held straight, and is characterized by the absence of the prominence which the normal muscle produces.

Unilateral paralysis of the trapezius allows the scapula to sink downward, causing the distance between its internal margin and the vertebral column to become greater. As a consequence, the arm falls forward, the clavicle becomes more

prominent, the supraclavicular fossa more marked, and the posterior upper angle of the scapula can be distinctly felt. Voluntary elevation of the shoulder and the motion of the scapula toward the spinal column is interfered with, and becomes only possible with the aid of the levator anguli scapulæ and the rhomboidei. The arm can not well be raised above the horizontal position in spite of the serratus which acts normally, because the action of the upper third of the trapezius is lost. The paralysis of both trapezii allows both shoulders to sink outward and forward, so that the back appears more curved; the ability to support the head in the upright posture is sometimes interfered with. Simultaneous paralysis of the sterno-cleido-mastoids and the trapezii gives a combination of both clinical pictures. If, in addition, the inner (smaller) portion of the nerve takes part, the resulting paralysis of the laryngeal muscles, the velum palati, and the pharyngeal muscles manifests itself by hoarseness, the nasal tone of the voice, and difficulty in swallowing. The increase in the frequency of the pulse, which has in such cases been observed by Seeligmüller, must be attributed to the simultaneous affection of the cardiac branches of the vagus. Prognosis and treatment are the same as in the spasmodic affections, and little more can be said about the ætiology. These forms of paralysis have been known to occur in consequence of certain occupations, e. g., in water-carriers (Seeligmüller), and in the course of tabes it has been seen as a bulbar affection. We may also imagine an injury to the nuclei of the nerve during difficult labor, and if we find symptoms of paralysis in the muscles of the neck in new-born children, who for the first few years of life are unable to hold the head straight, such a possibility ought not to be forgotten (Gowers).

LITERATURE.

- Seeligmüller. Arch. f. Psych., iii, 2, p. 433, 1872.
 Kropff. Beobacht. über Krämpfe im Bereiche des Accessorius und der oberen Cervicalnerven. Diss. Inaug., Göttingen, 1875.
 Remak. Doppelseitige Lähmung des Accessorius Willisii. Deutsche med. Wochenschr., 27, 1885.
 Duchenne-Wernicke. Physiologie der Bewegungen, pp. 588 *et seq.* Cassel u. Berlin, 1885.
 Martius. Berliner klin. Wochenschr., No. 8, 1887.
 V. Keller. Deutsche med. Wochenschr., 1887, xiii, 27.
 Landolt. Torticollis ocularis. Bull. méd., 1890, 50.
 Guibert. Crampe fonctionelle du cou. Revue de méd., 1892, 4.