

Plexus cervicalis

The cervical plexus (plexus cervicalis) is formed by the ventral branches (rr. ventrales nervorum spinalium) of the first four cervical nerves C1–C4 and their connectors. This plexus is located on the scalenus medius muscle and on the levator scapulae muscle under the sternocleidomastoid muscle. It is covered by deep cervical fascia (lamina praevertebralis). The plexus gives rise to sensitive and motor nerves for the muscles and skin of the neck and for the diaphragm.

Sensitive nerves

They come to the surface in the middle of the posterior border of the sternocleidomastoid muscle at a place called the punctum nervosum. They come to the surface very close to each other. From there, the sensitive nerves diverge to the respective innervation areas.

N. occipitalis minor (C2, C3)

Course: rises along the posterior edge of the sternocleidomastoid muscle to the lateral part of the occipital region of head

Innervation: skin of the lateral part of the occipital region

N. auricularis magnus (C2, C3)

Course: along the surface of the sternocleidomastoid muscle up under the bolt, gives off two branches:

- *r. anterior* – it often has a connection with the facial nerve
- *r. posterior*

Innervation

- *r. anterior* – skin of the front side of the auricle (except for areas innervated by the IX and X cranial nerves), skin of the regio parotideomasseterica
- *r. posterior* – skin of the back of the auricle, skin of the mastoid region

N. transversus colli (C3)

Course: goes medially forward through the sternocleidomastoid muscle under the platysma, it divides into two branches:

- *r. superior* – it has a connection with r. colli nervi facialis - the so-called ansa colli superficialis
- *r. inferior*

Innervation:

- *r. superior* – skin of *regio suprahyoidea*
- *r. inferior* – skin of *regio infrahyoidea*

Nn. supraclaviculares

They are made up of a variable number of thin sensitive nerves, which, after exiting the punctum nervosum, descend (fan-like) over the clavicle. It creates 3 groups:

- *nn. supraclaviculares mediales* – they go caudally and medially, innervating the skin in the fossa jugularis and above the manubrium sterni
- *nn. supraclaviculares intermedii* – they descend caudally and innervate the skin in the lower part of the neck and in the clavicular and infraclavicular regions (in the extent of the pectoralis major muscle)
- *nn. supraclaviculares laterales* – they descend caudally and backwards, innervating the skin of the acromial region

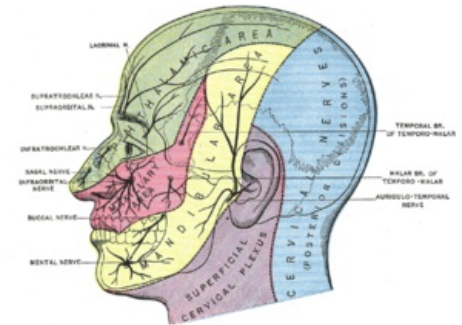
Motor nerves

Short nerves: rr. musculares

Long : n. phrenicus

Rr. musculares

They come from all rr. ventrales of cervical plexus.



The sensitive innervation of the head, the blue and violet areas are innervated from the cervical plexus

Inervation:

- C1 – m. rectus capitis lateralis
- C1, C2 – m. rectus capitis anterior
- C2, C3 – m. longus capitis
- C2-C4 – m. longus colli

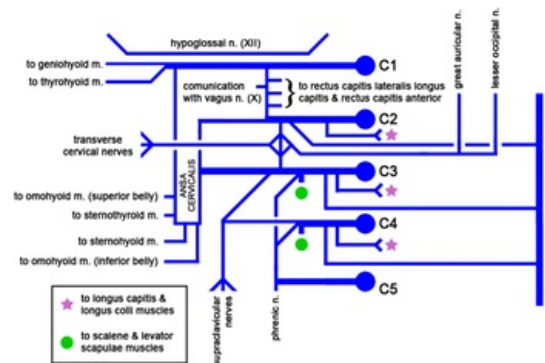
N. phrenicus (C4, secondary fibers from C3 and from C5)

N. phrenicus is a relatively strong, mixed nerve with a predominance of motor fibers.

Course: it emerges from the cervical plexus at the lateral edge of the scalenus anterior muscle, converges on its front surface through the apertura thoracis superior (placed in front of the vagus nerve) caudally into the mediastinum.

- *N. phrenicus dexter*: it descends further between a. et v. subclavia, along the right border of v. brachiocephalica dextra and v. cava superior.
- *N. phrenicus sinister*: descends between a. et v. subclavia, attaches to the left side of the arcus aortae (in front of n. vagus sinister)

Both nerves then run caudally along the sides of the pericardium between the pericardium and the mediastinal pleura ventral to the pulmonary hilae. Part of the fibers pass to the right through the foramen venae cavae and part to the left through the hiatus oesophageus to the abdominal surface of the diaphragm.



Cervical plexus

Inervation:

Motor fibers:

- rr. phrenici – they innervate the diaphragm

Sensitive fibers:

- rr. pericardiaci – fibers for the pericardium, mediastinal and diaphragmatic pleura
- rr. phrenicoabdominales – they innervate the peritoneum below the diaphragm up to the level of the gallbladder and pancreas

N. phrenicus accessorius – accessory fibers usually from C5 conducted as a separate branch from the brachial plexus

Clinical Notes: Damage to phrenic nerve dx. or sin. causes paralysis of the corresponding part of the diaphragm. Irritation of the nerve causes twitching of the diaphragm, which may be a sign of inflammation of the peritoneum or brain damage. In the common case, it is a hiccup (singultus).

Links

Sources

- DYLEVSKÝ, Ivan, Rastislav DRUGA a Olga MRÁZKOVÁ. *Funkční anatomie člověka*. 1. vydání. Praha : Grada Publishing, 2000. 664 s. ISBN 80-7169-681-1.
- ČIHÁK, Radomír. *Anatomie III*. 2., uprav. a dopl. vydání. Praha : Grada, 2004. 673 s. ISBN 80-247-1132-X.