

Case Report

Enlarged Middle Cervical Ganglion with Ansa Subclavia

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ABSTRACT

There is not much literature available on the size of middle cervical ganglion. It is usually either too small or occasionally absent. The present study was done in the department of Anatomy at PGIMS (Rohtak) during the undergraduate teaching in the dissection hall. An enlarged middle cervical ganglion along with Ansa subclavia was observed on the right side in one cadaver only. It is rare to observe such a big sized middle cervical ganglion.

KEY WORDS: Cervical Ganglion, Ansa subclavia, Neck Masses.

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BACKGROUND

The sympathetic chains are two in number and are paravertebral in position. Each ganglionated trunk extends from the base of skull to the coccyx.

The diversity of structures present in the neck makes it an important region of study from an anatomical point of view. The cervical part of sympathetic chain is situated anterior to prevertebral muscle –longuscapitis and posterior to the carotid sheath. It receives no white ramicomunicantes from cervical segments of spinal cord [1]. Rather, preganglionicfibres come from the lateral horn cells of T1-T5 segments of spinal cord. Post ganglionicfibres via grey ramicomunicantes arise from this part of sympathetic trunk for each of the 8 cervical nerves.

Cervical sympathetic trunk is comprised of 3 ganglia- superior, middle and inferior. Initially there were 8 ganglia corresponding to the number of cervical spinal nerves. Later, they fuse to form 3 ganglia.

Superior cervical ganglion is formed by the fusion of upper four cervical ganglia. It is fusiform in shape & largest of all, measuring approx. 2.5cm in length. It is present behind the internal carotid artery opposite C1-C2 or C2-C3 vertebrae [2] and in front of longuscapitis muscle.

Middle cervical ganglion results from the coalescence of C5 & C6 ganglia. It lies between the common carotid artery anteriorly and loop of inferior thyroid artery posteriorly, opposite the C6 vertebra. It is smallest of the all cervical ganglia and is absent occasionally. It joins with inferior cervical ganglion via 2 cords- posterior

cord splits to enclose the vertebral artery whereas anterior cord forms Ansa subclavia which is defined as a loop around the first part of subclavian artery [3].

Inferior cervical ganglion is formed by the merging of C7 & C8 ganglia. It joins with the first thoracic ganglion to form a cervico-thoracic [1] or stellate ganglion.

Detailed anatomical knowledge of cervical sympathetic chain has become an essential subject of interest for surgeons to minimize the risk of injury during various surgical interventions such as cervical sympathectomy in Raynaud's disease or surgical anterior approach adopted to access the subaxial cervical spine for cervical disc herniation. Hence, a better understanding of cervical sympathetic trunk is needed.

CASE REPORT

During routine dissection of 4 male and 4 female adult cadavers in undergraduate training course in the department of Anatomy at PGIMS (Rohtak), one female cadaver on the right side of cervical region had an enlarged middle cervical sympathetic ganglion measuring approx. 29mm in length & 5 mm in width (Fig. 1) whereas left side showed absence of middle cervical ganglion. Grey rami communicantes were also seen. (Fig. 1) Ansa subclavia looping around right subclavian artery was also observed in the same cadaver. (Fig. 2) No other communicating loops or anomalies were seen. Superior cervical ganglion measured about 25mm in length on right side. The nearby structures also appeared to be normal.

DISCUSSION

Wreite [4] quoted that cervical sympathetic chain differed from other regions of sympathetic chain owing to obliterated segmentation as a result of fusion and division of segmental ganglia.

Middle cervical ganglion was reported as most inconsistent and comparatively smaller ganglion [1]. Pick [5] reported double middle cervical ganglion. Kiray et al [6], Ebraheim et al [7] and Katritsis et al [8] reported the incidence of middle cervical ganglion as 33.3%, 39.3% and 53.2% respectively. Ebraheim et al [7] reported

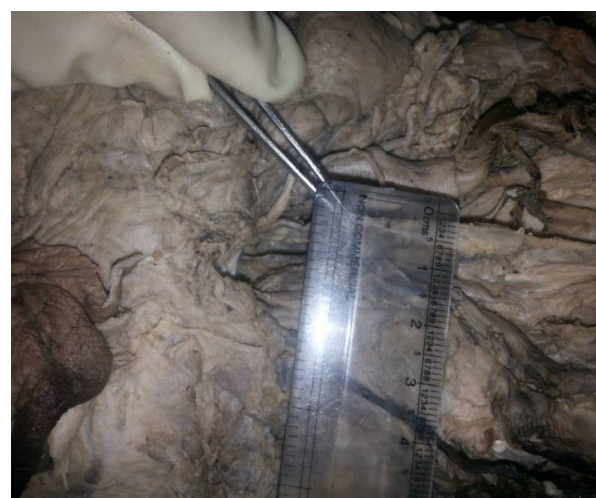
the length and width of middle cervical ganglion as 9.7 ± 2.1 mm and 5.2 ± 1.3 mm, Kiray et al [6] reported mean length as 9.7 ± 3.4 mm and mean width as 5.0 ± 1.1 mm whereas the present case showed the length of middle cervical ganglion to be and mean width to be 5 mm, which was comparatively much higher than that reported by others.

Caliot et al [9] stated Ansa subclavia as a nerve loop connecting middle cervical ganglion with inferior cervical ganglion & surrounding 1st part of subclavian artery on the same side. Karunagaran et al [1] reported 53.3% incidence and Caliot et al⁹ reported 83% cases of Ansa subclavia. Though our study could not be compared with above mentioned studies as we did not measure the % frequency of this nerve loop yet it was important to mention that Ansa subclavia was observed in the present case.

Fig. 1: Showing length of middle cervical ganglion.



Fig. 2: Showing breadth of middle cervical ganglion.



The cervical sympathetic chain had not been well documented in the anatomy literature. Occasional case reports of various nerve communications might have been reported by various authors but the present case was rare with the presence of an enlarged middle cervical ganglion along with Ansa subclavia. A thorough knowledge of anatomy of cervical sympathetic trunk with the possibility of occurrence of its variations may help in minimizing the risk of injuries during various surgical procedures.

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