Superior cervical ganglia

The anterior branches of the superior cervical ganglion form fragile networks, in which ganglia may be found, around the common carotid, external carotid and facial arteries.

The medial branches of the superior cervical ganglion consist of laryngopharyngeal and cardiac branches. The laryngopharyngeal branches supply the carotid body and travel to the side of the pharynx, to form the pharyngeal plexus with the glossopharyngeal (IX cranial nerve) and the vagal rami (X cranial nerve). The cardiac branch, which is thought to contain only efferent fibers, originates from branches from the inferior part of the superior cervical ganglion and is sometimes joined by a branch, from the sympathetic trunk between the superior and middle cervical ganglia. It passes down posterior to the common carotid artery, anterior to longus colli and traverses the inferior thyroid artery and recurrent laryngeal nerve. The cardiac branches from the right and left sides pass along differing courses at this point.

The right cardiac branch joins the deep part of the cardiac plexus at the back of the aortic arch by passing behind (or occasionally in front) of the subclavian artery and brachiocephalic trunk. At mid-neck level it receives branches from the external laryngeal nerve, inferiorly it receives one or two vagal cardiac branches and on entering the thorax it receives a branch from the recurrent laryngeal nerve. It also sends communicating branches to the thyroid branches of the middle cervical ganglion.

The left cardiac branch joins the superficial part of the cardiac plexus anterior to the left common carotid artery. It crosses the left aspect of the aortic arch to reach the ventral part of the cardiac plexus, and occasionally it passes to the right of the aorta to reach the deep part of the cardiac plexus. It connects with the middle cervical and cervicothoracic sympathetic ganglia through cardiac branches. It sometimes connects with the inferior cervical cardiac branches of the left vagus nerve (X cranial nerve), a plexus forms on the ascending aorta from the branches of these nerves.

Anterior branches

The superior cervical ganglion lies at the level of the second and third cervical vertebrae. It is situated behind the carotid sheath on the longus capitis muscle, a prevertebral muscle. It is the largest of the cervical sympathetic ganglia.
and is believed to represent the coalescence of four ganglia, which correspond with the upper four cervical spinal nerves.

The branches from the superior cervical ganglion are variable, but can be broadly classified into lateral, medial and anterior groups.

The anterior branches pass onto the common and external carotid arteries to form plexuses. In addition to supplying the blood vessels, the plexus around the facial branch of the external carotid provides the sympathetic supply to the submandibular parasympathetic ganglion. The plexus around the middle meningeal artery, a branch of the maxillary artery from the external carotid, serves the otic parasympathetic ganglion.

**Medial branches**

The superior cervical ganglion is the largest of the cervical ganglia and consists of the fused ganglia of C1 to C4. It is situated at the level of the second and third cervical vertebrae, anterior to the longus capitis muscle and posterior to the internal carotid artery and its carotid sheath. It is connected to the middle cervical ganglion inferiorly by the sympathetic trunk. It gives rise to lateral, medial and anterior branches.

The medial branches of the superior cervical ganglion consist of: laryngopharyngeal and cardiac branches. The laryngopharyngeal branches supply the carotid body and travel to the side of the pharynx, to form the pharyngeal plexus with the glossopharyngeal (IX cranial nerve) and the vagal rami (X cranial nerve). The cardiac branch, which is thought to contain only efferent fibers, originates from branches from the inferior part of the superior cervical ganglion and is sometimes joined by a branch, from the sympathetic trunk between the superior and middle cervical ganglia. It passes down posterior to the common carotid artery, anterior to longus colli and traverses the inferior thyroid artery and recurrent laryngeal nerve. The cardiac branches from the right and left sides pass along differing courses at this point. The right cardiac branch joins the deep part of the cardiac plexus at the back of the aortic arch by passing behind (or occasionally in front) of the subclavian artery and brachiocephalic trunk. At mid-neck level it receives branches from the external laryngeal nerve, inferiorly it receives one or two vagal cardiac branches and on entering the thorax it receives a branch from the recurrent laryngeal nerve. It also sends communicating branches to the thyroid branches of the middle cervical ganglion.

The left cardiac branch joins the superficial part of the cardiac plexus anterior to the left common carotid artery. It crosses the left aspect of the aortic arch to reach the ventral part of the cardiac plexus, and occasionally it passes to the right of the aorta to reach the deep part of the cardiac plexus. It connects with the middle cervical and cervicothoracic sympathetic ganglia through cardiac branches. It sometimes connects with the inferior cervical cardiac branches of the left vagus nerve (X cranial nerve), a plexus forms on the ascending aorta from the branches of these nerves.

**Lateral branches**

The superior cervical ganglion lies at the level of the second and third cervical vertebrae. It is situated behind the carotid sheath on the longus capitis muscle, a prevertebral muscle. It is the largest of the cervical sympathetic ganglia and is believed to represent the coalescence of four ganglia that correspond with the upper four cervical spinal nerves. The branches from the superior cervical ganglion are variable, but can be broadly classified into lateral, medial and anterior groups. The lateral branches include the gray rami communicantes to the upper four cervical spinal nerves. In addition, there are branches, which communicate with some of the cranial nerves, such as the inferior ganglion of the glossopharyngeal nerve, both ganglia of the vagus nerve, and to the hypoglossal nerve. The nerve that joins the glossopharyngeal and vagus nerves is termed the 'jugular nerve'. The lateral branches of the superior cervical ganglion also

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**Neuroanatomy**

**Bell's Palsy**

[http://bells-palsy-cranialnerves.blogspot.com](http://bells-palsy-cranialnerves.blogspot.com)
include nerves to the superior jugular bulb and to the meninges of the posterior cranial fossa.

**Cardiac branches**

The superior cervical ganglion lies at the level of the second and third cervical vertebrae. It is situated behind the carotid sheath on the longus capitis muscle, a prevertebral muscle. It is the largest of the cervical sympathetic ganglia and is believed to represent the coalescence of four ganglia, which correspond with the upper four cervical spinal nerves. Two or more branches from the inferior part of the superior cervical ganglion form the cardiac branch that may also receive a branch from the trunk between the superior and middle cervical ganglia.

The cardiac branch is believed to contain efferent fibers only. It runs down posterior to the common carotid artery, anterior to longus colli and crossenerve.

**External petrosal branches**

The external petrosal nerve is a branch from a plexus on the middle meningeal artery; it goes to the facial ganglion.

**Jugular nerves**

The superior cervical ganglion lies at the level of the second and third cervical vertebrae. It is situated behind the carotid sheath on the longus capitis muscle, a prevertebral muscle. It is the largest of the cervical sympathetic ganglia and is believed to represent the coalescence of four ganglia, which correspond with the upper four cervical spinal nerves. The nerve, which joins the glossopharyngeal and vagus nerves, is termed the 'jugular nerve'.

**Laryngopharyngeal branches**

The superior cervical ganglion lies at the level of the second and third cervical vertebrae. It is situated behind the carotid sheath on the longus capitis muscle, a prevertebral muscle. It is the largest of the cervical sympathetic ganglia and is believed to represent the coalescence of four ganglia, which correspond with the upper four cervical spinal nerves. The laryngopharyngeal branch is a medial branch of the superior cervical ganglion. It supplies the carotid body and forms the pharyngeal plexus with the glarynx.

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