Cervical vertebra

By convention, the cervical vertebra are numbered, with the first one (C1) located closest to the skull and higher numbered vertebrae (C2-C7) proceeding away from the skull and down the spine.

The general characteristics of the third through sixth cervical vertebrae are described here. The first, second, and seventh vertebrae are extraordinary, and are detailed later.

The bodies of these four vertebrae are small, and broader from side to side than from front to back.

The anterior and posterior surfaces are flattened and of equal depth; the former is placed on a lower level than the latter, and its inferior border is prolonged downward, so as to overlap the upper and forepart of the vertebra below.

The upper surface is concave transversely, and presents a projecting lip on either side.

the lower surface is concave from front to back, convex from side to side, and presents laterally shallow concavities which receive the corresponding projecting lips of the underlying vertebra.

The pedicles are directed laterally and backward, and are attached to the body midway between its upper and lower borders, so that the superior vertebral notch is as deep as the inferior, but it is, at the same time, narrower.

The laminae are narrow, and thinner above than below; the vertebral foramen is large, and of a triangular form. The spinous process is short and bifid, the two divisions being often of unequal size. Because the spinous processes are so short, certain superficial muscles (the trapezius and splenius capitis) attach to the nuchal ligament rather than directly to the vertebrae; the nuchal ligament itself attaching to the spinous processes of C2-C7 and to the posterior tubercle of the atlas.

The superior and inferior articular processes of cervical vertebrae have fused on either or both sides to form articular pillars, columns of bone that project laterally from the junction of the pedicle and lamina.

The articular facets are flat and of an oval form:

the superior face backward, upward, and slightly medially.

the inferior face forward, downward, and slightly laterally.

The transverse processes are each pierced by the foramen transversarium, which, in the upper six vertebrae, gives passage to the vertebral artery and vein, as well as a plexus of sympathetic nerves. Each process consists of an anterior and a posterior part. These two parts are joined, outside the foramen, by a bar of bone that exhibits a deep sulcus on its upper surface for the passage of the corresponding spinal nerve.

The anterior portion is the homologue of the rib in the thoracic region, and is therefore named the costal process or costal element. It arises from the side of the body, is directed laterally in front of the foramen, and ends in a tubercle, the anterior tubercle.

The posterior part, the true transverse process, springs from the vertebral arch behind the foramen, and is directed forward and laterally; it ends in a flattened vertical tubercle, the posterior tubercle.

The anterior tubercle of the sixth cervical vertebra is known as the carotid tubercle or Chassaignac tubercle. This separates the carotid artery from the vertebral artery and the carotid artery can be massaged against this tubercle to relieve the symptoms of supraventricular tachycardia. The carotid tubercle is also used as a landmark for anaesthesia of the brachial plexus and cervical plexus.

The cervical spinal nerves emerge from above the cervical vertebrae. For example, the cervical spinal nerve 3 (C3) passes above C3.