

LEVEL: MEDULLA—OBEX

This section is at the inferior margin of the fourth ventricle. The posterior surface of the medulla has opened and the medulla is beginning to expand laterally. The medullary olives which will become larger in the next sections are seen posterolateral to the medullary pyramids.

Cranial Nerves

Motor. The nucleus of nerves XII and X are conspicuous in the floor of the fourth ventricle. The hypoglossal (XII) nerve innervates the intrinsic muscles of the tongue, while the dorsal motor nucleus of nerve X innervates the thoracic and abdominal viscera up to the left colic flexure. The ambiguous nucleus is present in the lateral margin of the reticular formation and at this level the motor neurons are part of nerve X and innervate the pharynx and larynx.

Sensory. The axons subserving the gustatory and visceral sensations are carried via nerves X, IX, and VII and enter the tractus solitarius. The cell bodies of the solitary form the secondary neurons in this pathway. The axons of these cells run bilaterally in the medial lemniscus up to the ventral posterior medial nucleus in the thalamus.

Tracts. The gracile nucleus is disappearing while the cuneate nucleus is still large. Numerous fibers are still seen entering the medial lemniscus which is prominent posterior to the pyramids, between the inferior olives. External to the cuneate tubercle and descending nucleus of nerve V, the spinocerebellar tracts and other fibers from nuclei in the brain stem are accumulating and starting to form the inferior cerebellar peduncle. The external cuneate nucleus is seen on the surface of the cuneate nucleus; it corresponds to Clark's nucleus in the spinal cord.

