

and on the inner sides of the hands, forearms and arms. In a lesion at the level of the seventh cervical, the anæsthesia affects, in addition, the radial sides of the hands, forearms and arms. At the fifth and sixth cervical, the anæsthesia extends to the back of the shoulder and arms in addition to the above. If at the second, third and fourth cervical, the entire surface of the neck and upper part of the shoulder will be affected.

Fractures and Dislocations.—Dislocation of the atlas or axis is, as a rule, rapidly fatal, owing to compression of the cord between the posterior arch of the atlas and the odontoid process of the axis. The dislocation may be produced by a twisting of the neck, whereby the check ligament, first, and then the transverse and other ligaments are ruptured and the atlas displaced forwards on the axis. In children, traction of the head, combined with rotation, is dangerous, since, in young people, the odontoid process is incompletely developed, and, hence, might slip beneath the transverse ligament and permit dislocation. When the cord is crushed at the first or second cervical vertebra, death is usually instantaneous; when at the third, fourth or fifth, death soon occurs from injury to the phrenic, but when below the fifth, breathing may still be carried on by the action of this nerve.

Operations.—*Spinal Drainage.*—For drainage purposes, in cases of increased intra-cranial pressure, the spinal membranes may be punctured, as done by Quinke (1893), who inserted the needle between the third and fourth lumbar vertebrae, and, therefore, below the spinal cord. The depth of the puncture necessary to reach the membrane in infants is about four-fifths of an inch, whereas, in adults, it is about two inches. *Spinal cocaine* was proposed and employed by Corning, of New York, but was popularized by Tuffer at the Thirteenth In-