

No operative interference for the removal of the growth could, of course, have been of benefit, nor would the widespread symptoms point to a cortical lesion, unless to one of such extensive area as to have rendered its removal extremely hazardous, if not impossible. Bearing in mind the known danger of the use of anesthetics in cases of brain-tumor, yet appreciating the importance of correcting an existent peripheral source of irritation, ether was given, but in very small quantity. The good recovery from the effects of both the anesthesia and operation, and the interval between these and the fatal ending, would indicate that the operative procedures could not have caused death except, possibly indirectly, by increasing in some way the vascularity and, therefore, size of the growth.

INJURY OF CERVICAL SPINE, WITH LUXATION; REDUCTION; CURE.

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F. J. W., aged fifty-five years, a railroad conductor in the employ of the Missouri, Kansas & Texas Railway, on the 10th of July, 1889, at the town of St. Jo, Texas, was assisting in the side-tracking of some flat cars, the brakeman being at the switch-target, while he stood on the siding awaiting the approach of the cars. As they came toward him he grasped the brake to mount a car, when the staff broke, and he was precipitated, back downward, in front of the train, his head falling between two ties, while the brake-beam caught his body, pushing it toward his head and turned him a complete somersault, leaving him lying on his face. He was found beneath the second car, three trucks having passed over him. When dragged from beneath the train his upper extremities were paralyzed and he insisted that they were cut off, and he would not believe to the contrary until his gloves were removed and his hands held up for his inspection. This occurred at five P. M. Nothing was done for him that day.

On July 11th, at noon, nineteen hours after the accident, I received him at the depot at Denison, and had him transferred to his home, where an examination revealed a slight bruise on the right leg, another unimportant wound on the left shoulder, and a bruise the shape of the letter "J," beginning on the edge of the forehead over the right eye, running backward and around the upper edge of the occiput, and terminating about where it joins the left parietal bone. This bruise was about an inch wide and plainly visible, as the man was bald.

Of the bruises and wounds he complained but little, and said that his suffering was chiefly in his neck, particularly in the back of the neck at the base of the skull, and that there was a sense of constriction in the throat. The posterior aspect of the neck presented no abnormal condition on superficial examination, except a slight swelling about an inch wide at the base of the occiput extending from one mastoid process to the other. The anterior aspect of the neck, however, showed a condition which I do not recollect having ever seen described. It somewhat resembled a combined case of mumps and goitre. The sterno-cleido-mastoid muscles bulged out at the angles of the jaws, and were perfectly flaccid, but there was no swelling present. The pomum Adami was almost on a line with the chin, and the whole front of the neck was unduly prominent.

When this examination was made sensation in the upper extremities had been partially restored; that is, complete paralysis of sensation did not exist. He only complained of a numbness and spoke of his inability to feel a fly crawling on either hand. The ability to move the arms and hands had also returned, but there was no power to turn the head by the muscles of the neck. When asked to turn over, he replied: "Wait until I get my head," and taking it in his hands turned it with his body.

Realizing that this man's neck was dislocated, I directed two assistants to take his feet and make counter-extension, while I took his head, with the fingers of one hand clutched under the eyebrows and those of the other under the occiput; violent extension was resorted to, with oscillation forward and backward, and immediately the head assumed its proper position on top of the spinal column, all the abnormal appearances at once disappeared, while the patient, looking up, remarked with a laugh that the sense of constriction in the throat had left. The head, neck, and shoulders were then encased in a plaster-of-Paris mould, where they remained two weeks. At the expiration of two days the remaining numbness of the arms and hands had disappeared, except a peculiar sensation in the right fingers, which yet remains, and which he describes as a feeling which would be produced by washing in water containing cornmeal. On the day succeeding the reduction the temperature rose to 103°, but gradually subsided under treatment.

In the manipulation necessary to accomplish reduction no crepitus was noted, nor was any attempt made to discover any, on account of the danger which might result to the spinal cord from spicula, should any be present.

On the fourth day after the accident there occurred a hemorrhage from the mouth, which was slight in extent. This recurred on the fifth day, and again on the sixth, when it was quite severe. It proceeded from a wound in the floor of the mouth which had been made by a tooth in the upper jaw. Only one tooth was present in the upper jaw—the right first molar—and it was worn down to a sharp edge on one side and

broken off on the other. At the time of the accident so much pressure was brought to bear on the patient's head, with the jaw-bone against the breast, that the lower jaw had been forced past the upper, until the tooth penetrated the tissues beneath the tongue.

At the end of two weeks the plaster apparatus was exchanged for one of sole leather, which was neater, lighter, and so constructed as to permit the patient to sleep upon the side.

At the end of a month he was able to sit up and move about the room, even going into the yard, but in doing so used artificial support to the head. In rising from the recumbent position he has to take his head in his hands. While sitting up he leans his head against a board attached to the back of the chair, and while walking leans his head forward on his fist which grasps his beard. To assist his movements an apparatus was constructed of the nature of a steel backbone with a crutch head on the upper end. This was fastened around the waist, by a belt, and straps, similar to those soldiers use to carry their knapsacks, bound it to the upper part of the chest and steadied the head upon the spinal column. Continuous sitting in the erect position, however, developed a tenderness which degenerated into a pain, so that at the end of one or two hours he was compelled to lie down again. While recumbent there was no pain except upon pressure, and that limited to the spinous process of the third cervical vertebra. About the first of September, or fifty days after the accident, he began to suffer excruciating pain at the approach of a weather change. This pain, though most severe in the neck, was not limited to it, but in severe storms extended to other joints.

About this time also the tissues on the back of the neck began to assume a mottled appearance. The circulation became very sluggish, and most noticeably so about an inch to the right of the median line, on a level with the third cervical vertebra. He spoke of a gritting or clicking with every attempt to turn the head, and an exquisite pain if the head dropped forward beyond a certain point. During the next ten days the circulation improved somewhat, yet it is not certain that some tissue necrosis may not yet be encountered.

At the present writing, 107 days after the accident, his condition is stationary. The accompanying sketch is taken from a photographic side view of the patient: The bulge on the back of the neck is plainly apparent, showing that reduction did not reduce all the injured parts to their normal situation. His neck presents the appearance of a bent knitting-needle which has been straightened, that is, it still has a kink in it.

This condition may be due either to a slight displacement of one of the cervical vertebrae which was not reduced when extension was resorted to, or may have been caused by the crushing of the body of one of the

vertebræ, or the fracture of one of the vertebræ immediately posterior to its body. Considering all the points presented in this interesting case, my belief is that there were present both dislocation and fracture.



Another point of interest is the alteration of voice. His voice is strong, but is such as is produced by what is popularly known as "talking down in his throat." Examination of the fauces reveals nothing which will explain this, nor was there at any time any complaint of injury to the larynx. When we consider how little of the tonsils have to be removed in order to alter the voice, it may be explained by some alteration in the size or shape of the pharyngeal cavity too insignificant to be detected.

The only remaining evidence of the paralysis is limited to the fingers of the right hand, which he says feel as though gravel were caving any article he touches.

The steel backbone referred to failing to give him relief from pain, a jury-mast was constructed, which he is now wearing with some satisfaction.

The mottled appearance spoken of has entirely disappeared. The suffering at the approach of weather changes yet continues.