

form it occurs without any bone injury, being demonstrable during life, and many autopsies have proved that such a lesion in the spinal cord is possible without the integrity of the spinal column being interfered with. This variety, which I have called primary hematomyelia (the word primary indicating that the bleeding results directly from the violence without the intervention of crushing or pressure by bone), is found almost exclusively in the lower cervical and upper thoracic regions, and results from sudden forced flexion or extension of the neck, e. g., diving in shallow water; the symptoms come on immediately."

*History of the Case.*—A lad, aged 16, was caught in a drill machine at the A., T. & S. F. shops at Gallup, N. M., Dec. 24, 1903, and sustained severe wrenching of the neck and shoulders, as was indicated by numerous abrasions about the face, neck and chest. He was rendered unconscious, but quickly revived and described his sensations during the receipt of the injury to the effect that his head was forced forward on his chest and was somewhat twisted. On recovering consciousness within a few minutes he found himself unable to raise either arm from the shoulder, though the function of forearms and wrists was unimpaired. He experienced no pain further than that due to the superficial violence about his head and neck, which disappeared within a few days, there being also absent muscular tenderness about the neck. The young man was kept quiet in bed and under close observation. Sensation for heat and cold was normal; in fact, no sensory disturbance seemed present except the existence of numbness over the occipital region, diminishing downward toward the insertion of the ligamentum nuchæ. About ten days later the temperature suddenly rose to 104, accompanied with a rapid and feeble pulse, nausea and general malaise. Bromids were administered in this attack, which passed without further symptoms.

Considerable atrophy of the suprascapular muscles and a general diminution in the size of the arms were apparent at the end of six weeks, though the patient had learned to use his upper extremities with much dexterity, finding a way to throw them up to his head and shoulders by the use of the pectoral muscles and the latissimus dorsi.

The general condition improved with increase of weight, and the patient was finally dismissed from the hospital and allowed to return to his home at a town a hundred miles distant, whence come reports of constant improvement in the tone and in the use of the members.

*Comments.*—The point of lesion in the cord in this case would seem to be easily defined by the clear limitation of the muscles involved; those supplied by the anterior thoracic, posterior thoracic, circumflex in part, suprascapular, and principally the musculo-cutaneous, that portion of the brachial plexus arising from the fifth, sixth and seventh cervical nerves (the outer and posterior cords), which undoubtedly represents within definite limits the portion of the cord which was the seat of hemorrhage, which would appear to have been confined to the gray matter. Examination of the case eleven months after the injury shows complete recovery with perfectly restored function.

## A CASE OF HEMORRHAGIC TYPHOID.

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*History.*—J. O., aged 28, single, occupation woodsman, was admitted to the hospital on the evening of Sept. 3, 1903, with a history of having been ill one week, and of coming from a camp where typhoid fever was present. Temperature, 104.6; pulse, 94; respiration, 34; urinary analysis negative.

*Course of the Disease.*—The next morning the temperature was 105; pulse, 100; respiration, 42; considerable bronchial cough, severe headache and delirium. The pulse becoming weaker, he was placed on strychnia, gr. 1/60 every four hours, while the nervous symptoms and pyrexia were treated by the icebag to the head and ice-water sponges every two hours.

September 5. Temperature ranged from 102 to 105; pulse from 90 to 100; respiration varied between 40 at 8 a. m., 22 at 2 p. m., and back to 40 at 6 p. m.; abdominal symptoms were now more pronounced, there being considerable tympanitis and diarrhea; for these turpentine stupes and turpentine inunctions were used, with salol and bismuth betanaphtholate internally and later turpentine emulsion; large quantities of gas were expelled. The next night showed no change in his condition except that there was circulatory depression during the sponges, for which he was given a half ounce of whisky before the treatment.

September 6. The temperature remained through the day at 105, pulse from 95 to 104 and weaker, respirations 28 to 36. Ice-water enemas were given every three hours, while strychnia was given hypodermically every four hours in dose of 1/40 grain; the rectal tube was also used with good results.

Between this date and September 10 the patient continued to be desperately ill; the heart showed some intermittence so nitroglycerin, gr. 1/200, was added to his strychnia; the other symptoms were the same.

September 11. Temperature from 102.2 to 104, pulse from 88 to 94, better quality; respirations from 22 to 32; cold packs were used at this point, being better borne by the patient. There was considerable cough and some congestion of the bases of the lungs.

September 13. Temperature falling very slightly, the pulse lower and of fair quality; respirations still from 28 to 36.

September 14. Temperature from 101.8 to 103.6, pulse from 92 to 94, respirations from 28 to 44. This was the eighteenth day of the disease. Hemorrhages from the gums and mucous membrane of the mouth now made their appearance, and also under the skin wherever the hypodermic needle was used.

September 15. There was a continuous hemorrhage from the rectum, the urine also being quite red; a slight oozing of the blood was next noticed from the skin of the nose; ergotol in 10 minim doses was given hypodermically every four hours and 15-grain doses of calcium chlorid by the mouth every five hours. Besides this, a mouth wash of adrenalin chlorid 1 to 4,000 was used and with good effect.

September 17. The temperature ranged from 100 to 101.6, respirations from 22 to 30, pulse from 98 to 106; after an enema at 2 p. m., he expelled a great deal of gas and dark blood, while the urine was almost black. Protein, gr. 15 every three hours, was added to the treatment at this point.

September 18. Temperature, 100 to 103.6; respirations from 22 to 28. The bleeding from the mouth was much better, but a severe hemorrhage from the bowels occurred at 5 a. m., there being three pints of fresh blood expelled; bladder hemorrhage same. Morphine, gr. ¼, was given at once, as well as ergot, m. x, and the administration subcutaneously of 700 c.c. of normal salt solution. After the use of the morphia the respiration dropped as low as from 14 to 18 a minute and no fresh hemorrhages appeared.

September 20. Urine began to clear up; pulse became as low as 78; temperature, 99.8; respirations from 15 to 18. About this time two superficial abscesses appeared on the nates, but with antiseptic dressings they soon healed.

Between September 21 and October 4 the patient made steady progress, his bedside record being discontinued on the latter date. He was discharged from the institution October 21, after having been under treatment for 55 days. His convalescence was marked by a bradycardia, the pulse running as low as 48 beats per minute. The diet throughout consisted of broths, peptonized preparations and malted milk.

*Remarks.*—The symptoms which required the closest scrutiny were the diarrhea and tympanitis, the heart's action and the hemorrhages; the character of the latter making it an unusual clinical feature.

This patient lost in all about six pints of blood, which illustrates the point to which attention has been called by other clinicians, that a surprising amount of blood may be lost and yet recovery follow.