Clinical Notes, Suggestions, and New Instruments

REPAIR OF CRANIAL DEFECT BY NEW METHOD

REPORT OF APPARENTLY SUCCESSFUL CASE *

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History.—J. W. W., boy, aged 4 years and 5 months, residing near Bates, Ill., accompanied his grandfather, about 2 p. m., Nov. 18, 1919, to the barn lot where there were several horses. When the grandfather opened a gate, one of the horses ran out, and in passing kicked the child forcibly over the left eye. He was immediately taken to the house, where the head was washed off.

Dr. J. C. McMillan of New Berlin, Ill., was called. Recognizing the serious character of the injury, he applied a sterile gauze dressing and took the child at once to the Springfield Hospital, where he arrived about 4:30 p. m. There was immediate consultation.

Examination.—There was a lozenge shaped compound fracture; the fissure in the bone was about 3 inches long, and 1 inch broad, running down at each end to a point. It began near the outer border of the superciliary ridge and passed upward and backward over the frontal prominence nearly to the median line. Two large pieces of bone were indriven, causing loss of considerable brain substance.

Treatment and Results.—Under ether anesthesia, about six pieces of bone were removed. The two large fragments were inserted in a pocket, which was prepared in the left hypochondriac region, and was made by a slightly curved incision, nearly 3 inches long. The tissues were separated by artery forceps and scissors. The two pieces of skull bone were completely buried, and the incision was closed.

The wound in the frontal region was thoroughly cleansed, a pledget of iodoform gauze was inserted in the cavity, and the edges of the wound were brought together, except at the ends.

Because of the circumstances under which the wound was received, a good sized dose of tetanus antitoxin was administered subcutaneously.

There was considerable oozing from the head wound, and slight fever; also, for a few days, edema of the left eye; otherwise the progress of the case was satisfactory.

November 29, under ether, the iodoform gauze was removed, and the edges of the wound were trimmed and brought closely together. The head was again thoroughly cleansed and permanent dressing was applied.

December 31, pulsation was visible and palpable where the bone was lacking. The scalp wound was solid except at one end where the mother had bumped it in putting the child on a chair at the dinner table. Final operation was deferred one week until this had healed.

Jan. 7, 1920, at 2 p. m., assisted by Drs. C. W. East and J. C. McMillan, I made a horseshoe shaped incision beginning one-half inch from the outer edge and to the left of the

original wound, and extending to one-half inch beyond the inner edge of the wound, or about the median line. The scalp was laid back toward the eyebrow, beyond the defect in the cranium. The dura was found firm and solid, closing off the brain. The edges of the dura were lightly dissected. The two fragments of bone were taken from the pocket and placed exactly in their former positions. A considerable layer of fat had become fastened to the outer side of these bones during their sojourn in the abdominal wall, and this was utilized in sewing them in place with fine catgut. The large scalp flap was then brought over, completely closed with silk worm gut, and a firm dressing applied.

January 14, the dressing was removed from the head for the first time. The new incision, which had been closed by silk worm sutures, was found to be perfectly dry. The line of first injury showed a pin hole opening at two points. There was a slight serous exudate, no pus was apparent, no pulsation was apparent and the bones seemed to be in good position and adherent. The abdominal wound was perfectly healed.

January 26, the wound was dressed and the bone appeared firmly fixed.

COMMENT

Three points should be particularly emphasized:

Fig. 2. — Implanted fragments of skull, approximate size.

1. The implants should be placed in the hypochondrium with the outer surface of the bones in contact with the fatty tissues in this region. When they are removed, as much of this fatty tissue as possibly should be brought out with the bones. When they are replaced, this tissue should be sewed with fine catgut to the epicranial aponeurosis and the implants secured in place.

2. Some writers seem to think it quite necessary to dissect the dura away from the edges of the defect so as to bring its exposed outer surface on a level with the inner table of the skull. This was not done in my case. Unless there is good reason for this extensive, and possibly useless, dissection it should not be attempted. Even though a slight protuberance may exist, it is better than a defect. The cranial cavity is firmly and hermetically sealed, which is the important point.

3. A new flap was made to expose the defect. When the implants were put in place and enclosed, as I have indicated, this new flap exerted a certain amount of pressure, and finally will depress the dura to its normal position.

CONCLUSION

Usually, by implantation, it is possible to preserve the fragments of cranial bones for reimplantation when the original wound is in proper condition. The result in this case has been perfect recovery.

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A SIMPLE METHOD OF DISTINGUISHING WHITE FROM RED CELLS IN SPINAL FLUID CELL COUNTS

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While laboratory men who are looking at spinal fluids every day have no difficulty in quickly distinguishing between these cells without staining, clinicians of less experience will often find a differentiation troublesome, even with the high power. The use of acetic acid or Turk's solution has the obvious disadvantage of further diluting what may be a fluid of low cell count.

I have found no convenient method in the textbooks on clinical diagnosis, and the following procedure which, from its simplicity, is probably being used independently by many men, I have not seen described:

The fluid is taken in two test tubes. To one of these, containing about 2 c.c., is at once added one drop of Loeffler's methylene blue, and the tube shaken gently. The second tube is saved for other tests. Examination after two minutes

Fig. 1.—Repair of cranial defect: a, site of injury; b, line of incision for repair of defect; c, site of implantation.

* Patient presented to the Sangamon County Medical Society, Feb. 9, 1920.