THE REPAIR OF LUMBAR AND CRANIAL MENINGOCOELE WITH TANTALUM GAUZE

WILLIAM A. NOSIK, M.D.*
Cleveland, Ohio

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Not infrequently, the protrusion of the dura and arachnoid through a defect in either the vertebral arch or the cranium is encountered. Where no notable inclusion of neural elements exists, and no Arnold-Chiari malformation can be demonstrated, local surgical correction may be undertaken. The operative procedures usually consist of resection of the sac or its inversion into the canal, with an approximation of the edges of the dehiscence.

Where the defect is large, it may not be possible to effect a satisfactory primary closure, unless the sutures are placed under considerable tension—a frequent prelude to failure.

It may be necessary to borrow fascia from adjoining structures in the hope that, by imbrication, enough strength-in-depth may be gained to contain the variable hydrostatic pressures. If the pressure is not effectively contained, a troublesome pseudomeningocoele may follow.

In this consideration, the problem was not unlike that encountered in the repair of recurrent, large abdominal herniae which have long plagued the general surgeons. Where it has not been possible to effect a primary approximation of the edges, many efforts were made over the years by ingenious surgeons to buttress the defect with metallic plates, wires, grids, nettings and meshes. Because these materials were uncomfortable to the patient or lacked the proper physical qualities for retention in the body, their use was discontinued.

In 1947, Throckmorton2 submitted his results with tantalum gauze in the repair of herniae complicated by tissue deficiency. His studies, as well as those of Douglas,1 indicated that the new connective tissue grew through the interstices of the gauze to form a very solid fibrous aponeurosis—a favorable situation where a firm wall

* 10515 Carnegie Avenue, Cleveland 6, Ohio.
is desired. Satisfactory repair was made of herniae where local tissue deficiency rendered the usual type of autoplastic repair impractical.

The analogy to the problem encountered in an occasional meningocoele repair seemed striking, particularly where the size of the defect or the attenuation of the neighboring fascia presaged the formation of a pseudomeningocoele or actual breakdown.

Accordingly, when an infant was encountered in whom such a large dehiscence existed after excision and closure of the sac, imbrication of the lumbar fascia over tantalum gauze was done. The procedure followed is shown in Fig. 1. The convalescence of this 7-week-old boy was uneventful. Subsequent roentgenograms revealed the gauze to be intact and in good position. The tissue under the incision and in the implant area seems thicker and more firm, the operative site being otherwise unremarkable.

Another problem of similar type, though in a different locale, was likewise treated using tantalum gauze in the repair.

In this 3-year-old boy, there was a large right nasal meningocoele. Through a frontal craniotomy the dura was stripped from the floor of the frontal fossa and the neck of the meningocoele isolated as it passed through a defect in the right cribriform plate.

The nasal extension was resected transnasally by Dr. P. M. Moore. The edges of the sac were clipped with metal clips and sutured. To prevent further herniation through the bony defect, where the pulsating dura was unsupported by bone, a strip of tantalum gauze was placed across the area and another was sutured to the dura to prevent any possible shifting. A rather solid platform for the dura was thus provided. The convalescence was entirely uneventful. Approximately 1 year postoperatively, his condition remains good, there being no evidence of recurrence or rhinorrhea. The roentgenograms show the position of the tantalum screen postoperatively (Fig. 2).