Fascial closure in low myelomeningocele repairs

Technical note

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A simple method, utilizing a vertically hinged flap of lumbodorsal fascia, is described for closure of low-lying myelomeningocele defects.

KEY WORDS: low myelomeningocele repair · fascial closure

The principles of myelomeningocele repair have already been well described. The technique consists of preserving neural elements and fashioning a four-layer closure, consisting of dura, fascia, subcutaneous tissue, and skin. In sacral and very low lumbar lesions, achieving a fascial closure can be difficult because lateral to the defect there is gluteus muscle rather than lumbodorsal fascia. This report describes a simple maneuver to achieve fascial closure in sacral or lumbosacral lesions.

Technique

The sac is protected with saline dressings and a computerized tomography scan is obtained to evaluate ventricular size. If hydrocephalus is present, a ventriculoperitoneal shunt is placed at the same operation. Surgery is performed as soon as possible when there is a cerebrospinal fluid leak, to reduce the risk of infection. Blood loss is minimized, and replacement is given as needed. Dissection of the neural placode and creation of the dural closure is carried out as described elsewhere. The usual method of achieving a fascial closure consists of reflecting lumbodorsal fascia from either side of the midline. This is not possible in very low lesions since the gluteus maximus muscle is located laterally. The skin incision is extended rostrally in the midline (Fig. 1 left) to expose the lumbodorsal fascia above the myelomeningocele. A U-shaped flap of fascia is then fashioned (Fig. 1 center) and hinged at the upper margin of the defect. Dissection of the fascia off the spinous processes requires heavy scissors because of the dense fibrous attachments. The flap is then secured with interrupted or running fine sutures (Fig. 1 right). Closure of the subcutaneous tissue and skin is then carried out.

Discussion

Sacral and lumbosacral myelomeningoceles account for 36% of all cases of spina bifida cystica. The technique described in this report allows the creation of a solid fascial closure in these low lesions. This approach is easier than dissecting lumbodorsal fascia off its insertion on the iliac crests laterally or rotating gluteal muscle. A good fascial closure is especially important in cases where the dural layer is poorly developed. Extension of the skin incision in this manner does not adversely affect the closure. The skin can often be closed primarily with extensive undermining. Otherwise, one may resort to standard rotational flaps or bipedicle flaps with split-thickness skin grafts, as needed.

References

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FIG. 1. Operative diagrams showing the low-lumbar location of the myelomeningocele (left), the U-shaped flap of fascia hinged at the upper margin of the defect (center), and the sutured fascial flap (right).


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