

EP-196

이중 교차 근육 및 근막피부 피판을 이용한 광범위 수막척수류 결손의 재건

Reconstruction of an Extensive Myelomeningocele Defect Using a Double-Opposing Muscle and Fasciocutaneous Flap



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Purpose: To reconstruct an extensive defect following meningomyelocele repair, a double-opposing Z-plasty utilizing muscle and fasciocutaneous flaps was performed. Bilateral gluteus maximus muscles were elevated as 60-degree triangular flaps. The left muscle flap was based inferiorly and the right superiorly, crossing medially to cover the dural sac. Subsequently, bilateral fasciocutaneous flaps were elevated with opposing bases (left superiorly, right inferiorly) and crossed over the muscle layer. This double-opposing design prevents overlapping suture lines and minimizes tension.

Methods: A neonate presented with a 5x5 cm lumbosacral meningomyelocele. After neurosurgical repair, poor perfusion of the skin flaps necessitated debridement. This resulted in a massive 7x8 cm midline defect with an exposed dural sac, requiring immediate and robust multi-layered coverage to prevent cerebrospinal fluid (CSF) leakage and tissue necrosis.

Results: The defect was successfully reconstructed with minimal tension. Both the muscle and fasciocutaneous flaps survived completely without signs of ischemia. At the 5-month postoperative follow-up, the surgical site was well-healed with stable soft-tissue coverage. There were no complications such as wound dehiscence, distal necrosis, or CSF leakage despite the initial massive defect size.

Conclusion: The double-opposing gluteus maximus and fasciocutaneous flap is a highly reliable surgical technique for massive myelomeningocele defects. By crossing the muscle and skin layers in opposite directions, this method effectively disperses tension, obliterates dead space, and provides durable multi-layered coverage, significantly reducing the risk of critical postoperative complications.



Fig.1



Fig.2



Fig.3



Fig.4