Effect of Fat Graft on Dural Tear Repair in Lumbar Spine Laminectomy Surgery

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Abstract

**Background:** Dural tear is a common incidental problem in spine laminectomy surgery, which can be a serious complication. Dural sutures and adjuvant techniques such as gelfoam, fibrin glue, muscle graft, and recently fat graft are used to prevent the continuation of cerebrospinal fluid (CSF) leak and other possible complications. We aimed to evaluate the obtained results of fat and muscle graft usage in dural tear repair.

**Methods:** We have studied these techniques in 27 patients with incidental dural tears during 422 laminectomy surgeries. After sutures, fat and muscle grafts were placed and packed completely over the tear and the exposed dura and then were fixed. The results were compared between those patients in whom fat graft was used at the time of surgery for dural repairing (n=16) and those in whom muscle graft was used (n=11).

**Results:** The results indicated that dural tear was more common in the case of disk herniation and spinal canal stenosis accompaniment. We observed insignificant differences in the length of stay between those patients with fat and muscle grafts at the time of surgery for dural repairing (P=0.142). In addition, using fat graft rather than the other one reduced CSF leakage significantly (P<0.001). Moreover, duration of postoperative CSF leak was significantly shorter in the fat graft group (P=<0.001). The success rate of fat graft in the present study was 87.5%.

**Conclusions:** It seems that fat graft is a safe, simple, and rapid technique, being a successful alternative for muscle graft.