

SUPRATENTORIAL DURAPLASTY WITH AN ABSORBABLE SYNTHETIC MATERIAL:AN EXPERIMENTAL STUDY IN A RABBIT MODEL

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Aims and objective: To study the efficacy of an absorbable synthetic material as a dural substitute.

The parameters studied: - Incidence of post-operative CSF leaks, wound infections, cerebro meningeal and graft bone adhesion, inflammatory changes in the brain and the graft, neodura formation and graft resorption.

Material and methods: Experiment was conducted on twelve healthy rabbits, biparietal craniotomy was done in each rabbit and artificial dural was grafted on one side and the other side was used as control. The animals were sacrificed at one month and three months interval. Macroscopic and histopathological examinations were performed on the brain ,graft site and the overlying bone.

Results: There was no post-operative CSF leaks, wound infections, and the microscopic examination of the graft dura and the brain showed no cerebro-graft adhesion, or graft bone adhesion but there was foreign body type granulomatous inflammation seen at the place of the graft in all the rabbits in both groups (one month and three months). There was mild acute inflammatory reaction in the brain in two rabbits (16.67%) on the side of the graft (no. 6 and no. 7). There was no graft seen either in the one month or the three month group rabbits and there was no neodura seen.

Conclusion: The results are not promising for polycaprolactone to be used as an ideal dural graft in view of significant foreign body type granulomatous reaction at the site of dural graft. There was no neodura formation.