Novel Technique for Repair of Large and Persistent Anterior Skull Base Defect

Introduction:

Repair of skull base defect is challenging in cases of skull base malignancies and failed endoscopic CSF rhinorrhea procedure. Various materials have been described for the bony reconstruction of the skull base. We practice a novel technique, which is technically simple, low cost and uses easily available materials.

Methods:

This is a retrospective study of three patients who underwent Extended fronto-basal craniotomy for skull base lesions and two patients of failed endoscopic CSF rhinorrhea repair with large anterior cranial fossa defect were included in this study. The concept for this repair is based on the adhesive and hardening property of N-Butyl Cyanoacrylate. The bony defect in the floor of anterior cranial fossa was defined. This was covered with Gelatin sponge and N-butyl cyanoacrylate glue was sprayed over the gelatin sponge, which caused the adhesion and hardening of the gelatin sponge to the bony defect. This repair was then covered fascia lata graft using titanium screws and fibrin glue. Standard craniotomy closure was performed. Lumber drainage for CSF was removed on third postoperative day.

Results:

No CSF leak or meningitis was observed in any of the cases.

Conclusion:

Repair of the bony skull base defect using Gelatin Sponge soaked with N- Butyl Cyanoacrylate is an effective technique which is technically less demanding, uses easily available materials and of low cost. Further studies are required to explore the utility of this technique in Endoscopic and Transcranial skull base repair.