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Large Craniectomy Defect and Cranioplasty

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CASE HISTORY

A 34-year-old male sustained head injury in a road traffic accident in December 2002. CT scan revealed a large left frontotemporoparietal acute subdural hematoma with severe diffuse cerebral edema, mass effect and midline shift. The underlying left hemisphere was hypodense. He underwent left frontotemporoparietal craniotomy, evacuation of subdural haematoma and left frontal lobectomy, and was electively ventilated postoperatively. He developed wound infection, hence in January 2003, he underwent reexploration of wound with removal of bone flap. Later, he developed pseudomeningocele at operated site. CT san done revealed postoperative changes with hydrocephalus for which he underwent a right ventriculoperitoneal shunt in March 2003. Thereafter, he had showed gradual improvement in sensorium, motor and verbal capacities. He was discharged in Mar 2003, and was followed up in OPD. He was able to walk with single person support, could easily understand and follow simple commands and had effective expressive speech. He could take care of a few of his daily activities. He had a large craniectomy defect in left frontotemporoparietal area and an ill-defined headache over the left hemicranium for which he was referred here.

External examination revealed a large craniectomy defect over left frontotemporoparietal area with scalp invaginating the bone defect. Clinical and neuropsychological examination further revealed that his speech was adequate. He had impaired verbal working memory, verbal learning and an ill sustained attention. He had right homonymous hemianopia with right sided hemiparesis. CT scan done at the time of admission revealed a large left frontotemporoparietal craniectomy defect with underlying postoperative changes, and old left posterior cerebral artery and anterior cerebral artery infarcts.

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Fig. 1: Pre operative craniectomy defect

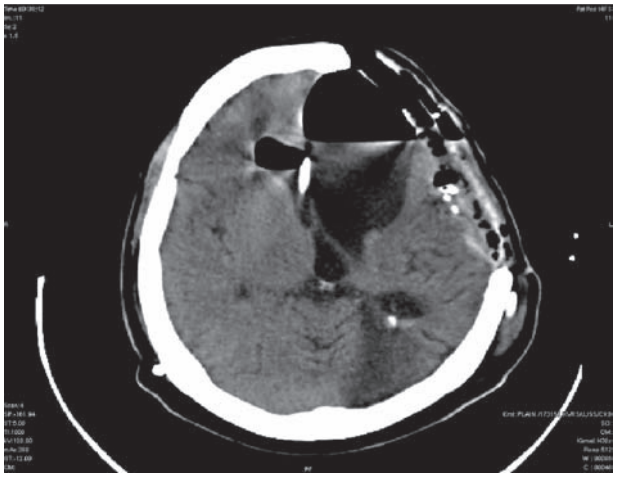

Fig. 2: Post operative appearance

In February 2005, he underwent re-exploration of old surgical wound and acrylic cranioplasty. Postoperative period was uneventful. At the time of discharge, the scalp wound had healed well with significant obliteration of the craniectomy defect.

There were no fresh deficits. Postoperative CT scan

done revealed the acrylic flap in situ with mild expansion of underlying brain parenchyma. Headache had reduced significantly.

The case highlights following two important issues:

1. Minimal speech deficits despite injury to almost entire left hemisphere.
2. Effectiveness of acrylic cranioplasty for not only large skull defects but also for post craniectomy headaches.

Though this patient does not exactly fit into the syndrome of the trephined, he had an ill-defined headache over the left hemicranium, which improved after cranioplasty.

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