

Objective: To report a rare instance of seizure occurrence secondary to ischemic infarcts following cranioplasty.

Case report: A 24-year-old female with no comorbidities developed a left temporoparietal subdural hemorrhage and subarachnoid hemorrhage following a motor vehicle accident. She presented with 1 post-traumatic seizure and a GCS of E1V1M5. She underwent a frontotemporoparietal decompressive craniectomy.

Her course was complicated by hospital-acquired pneumonia and pyogenic meningitis. She was discharged 39 days later on prophylactic anti-epileptic drugs (AED). Six months later, she developed communicating hydrocephalus requiring a ventriculoperitoneal shunt. She later underwent elective cranioplasty with polymethyl methacrylate. Within 3 hours of surgery, she developed 3 focal seizures. CT showed a thin SDH, and MRI confirmed an acute right thalamic infarct with hemorrhage and multiple left cortical hemorrhagic foci. She required aggressive AED escalation, including levetiracetam 1.5 g, clobazam 20 mg, lacosamide 200 mg, and phenytoin 100 mg, alongside sedation with midazolam, propofol, and ketamine. EEG revealed periodic lateralized epileptiform discharges. She eventually remained seizure-free and was discharged on day 5 with no residual deficits.

Discussion: Cranioplasty improves cerebral blood flow (CBF) in the cortex at the site of the procedure by 15 to 30% [3]. The cortex beneath a craniectomy loses elasticity over time. In this patient, the hemorrhagic foci could be attributed to a sudden increase in CBF and cerebral metabolism. Reperfusion injury following hyperperfusion can also result in ischemia. A sudden increase in CBF in a chronically dysfunctional brain may result in venous stasis leading to thrombosis. Clinicians should maintain a high index of suspicion for ischemia in post-cranioplasty seizure patients.

Conclusion: Cranioplasty-induced acute shifts in intracranial pressure may lead to changes in CBF. Acute ischemia, thus produced, can lead to post-cranioplasty seizures.

Keywords: Cerebral blood flow, Cranioplasty, Electroencephalogram, Ischemic infarct, Post-cranioplasty seizures.

Triple Double Sequential External Defibrillation Achieves Neurologically Intact Survival and Intact Working AV Fistula after 45 Minutes of Refractory Ventricular Fibrillation in a 73-year-old on Hemodialysis

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Introduction: Cardiac arrest while undergoing hemodialysis is common in India and carries a high risk of mortality, especially in elderly patients with multiple comorbidities when ventricular fibrillation (VF) becomes refractory. Double sequential defibrillation (DSD) is an emerging rescue strategy supported by evidence.

Aim: To highlight the role of DSED and high-quality CPR in VF to achieve neurologically intact survival and to emphasize that resuscitation should not be stopped early in witnessed in-hospital cardiac arrest.

Objectives: To report a rare case of neurologically intact survival after 45 minutes of continuous CPR for refractory VF using 3 attempts of double sequential defibrillation in a high-risk hemodialysis patient.

Material and methods: A 73-year-old male with T2DM, hypertension, CAD (EF 30%), and ESRD on maintenance hemodialysis 3 times a

week collapsed during the last hour of treatment. Initial rhythm was asystole, which progressed to coarse VF within 1 minute.

Immediate high-quality CPR was initiated with less than 20 seconds of no-flow time. The ACLS protocol included:

- Continuous CPR for 45 minutes.
- Endotracheal intubation at 6 minutes.
- Epinephrine 1 mg (13 doses).
- Amiodarone 300 mg IV and lidocaine 60 mg IV.
- standard biphasic shocks (200 J), which failed.
- At 38, 41, and 43 minutes, 3 attempts of double sequential defibrillation (DSD) were performed using two manual defibrillators (200 J each, shocks less than 1 second apart).

Result: Immediate ROSC was achieved after the 3rd DSD attempt. GCS 15/15 was regained within 15 minutes of shifting to the ICU. Bilateral rib fractures (4–7) were managed with multimodal analgesia and erector spinae plane blocks. He was successfully extubated on day 4 and discharged from the ICU on day 5 with a Cerebral Performance Category (CPC) score of 1.

Conclusion: Even after 45 minutes of refractory VF and initial asystole, neurologically intact survival is possible with persistent high-quality CPR and escalation to multiple DSD attempts. In monitored in-hospital settings like dialysis units, futility should not be declared early. Triple DSD can be lifesaving.

Keywords: ACLS, Adrenaline, Amiodarone, CPC score, DSED, Hemodialysis, Refractory ventricular fibrillation.

Successful Application of VV-ECMO in Trauma Patients with Severe ARDS: A Case Series Review

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Background: Severe trauma complicated by ARDS presents major management challenges, especially when traumatic brain injury (TBI) is present. Conventional ARDS strategies—high PEEP, permissive hypercapnia, and prone positioning—may exacerbate intracranial hypertension, limiting their use in neurotrauma patients. VV-ECMO is an established rescue therapy for refractory hypoxemia, yet its use in trauma requires adaptations due to bleeding risk, coagulopathy, and the need for modified anticoagulation protocols. This case series describes 5 polytrauma patients with severe ARDS, 3 with significant TBI, who were successfully supported with VV-ECMO and survived to discharge.

Introduction: Trauma-associated ARDS can result from pulmonary contusions, aspiration, transfusion-related lung injury, shock, and systemic inflammation. In patients with TBI, achieving lung-protective ventilation without compromising cerebral perfusion is challenging. VV-ECMO allows ultra-protective ventilation when conventional strategies fail, enabling oxygenation while minimizing ventilator-induced lung injury. In neurocritical care, however, ECMO requires meticulous neuromonitoring and individualized anticoagulation strategies to balance thrombosis and hemorrhage risks.

Case summaries: Case 1: A 22-year-old man with severe TBI (extradural hematoma, contusions, diffuse SAH) developed persistent hypoxemia despite lung-protective ventilation and prone positioning. VV-ECMO was initiated. Complications included