

Peri-Rolandic Intradiploic Encephalocele with Biphasic Table Destruction in an Adult: Illustrative Case of Surgical Management

Umika Paul BSE^{1,2}, Rrita Daci, MD^{1,2,3}, Brittany Owusu-Adjei, MD^{1,2,3}, Constance Mietus, MD, PhD^{1,2,3}, Mark D. Johnson, MD, PhD^{1,2,3}

¹University of Massachusetts Chan Medical School, Worcester, MA, USA; ² Department of Neurological Surgery, University of Massachusetts Chan Medical School, Worcester, MA, USA; ³UMass Memorial Health, Worcester, MA, USA

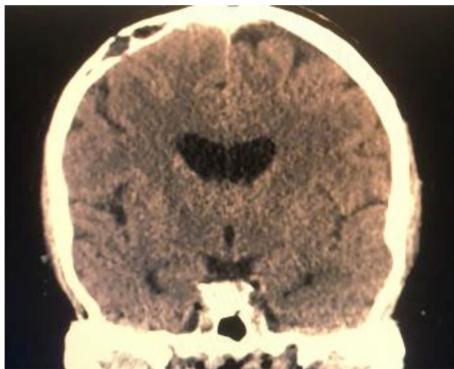


Introduction

An intradiploic encephalocele is a rare condition in which brain parenchyma herniates into the diploic space through a defect in the inner calvarial table, typically with an intact though thinned outer table. These lesions can mimic lytic skull processes on imaging and are often overlooked. We describe the presentation and management of an unusual case of an adult parietal intradiploic encephalocele overlying eloquent cortex and involving destruction of both calvarial tables.

Case Presentation

A 63-year-old man with a known intradiploic encephalocele presented with new progressive left upper extremity cramping and shaking, concerning for focal motor seizures.

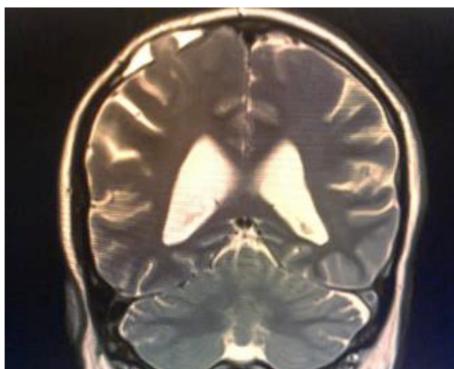


At the time of diagnosis, a non-contrast head CT had demonstrated a 5-mm inner table defect with thinning and destruction of the outer table and minimal herniation of brain parenchyma (Figure 1).

Figure 1. Initial non-contrast CT

This atypical morphology raises the possibility of a variant congenital origin or long-standing remodeling, although the clinical course resembled an acquired lesion.

Preoperative Imaging



MRI (obtained 7 years after initial studies) showed a 6-mm focal dehiscence of the inner table with a 7x12-mm diploic encephalocele overlying the peri-Rolandic region, consistent with interval enlargement (Figure 2).

Figure 2. Preoperative MRI

The patient developed worsening seizures and operative repair was performed.

Surgical Technique

A circumferential craniectomy surrounding the defect exposed thinned, discolored bone cortex consistent with chronic remodeling (Figure 3A). Both outer and inner cortices were removed to healthy margins, revealing intact arachnoid (Figure 3B). Because the herniated brain was presumed functional motor cortex, no parenchymal resection was undertaken. Reconstruction included duraplasty using acellular dermal matrix (AlloDerm) and cranioplasty with low-profile titanium mesh (Figure 3C).



Figure 3. Intra-operative cortex sparing repair

Postoperative Imaging

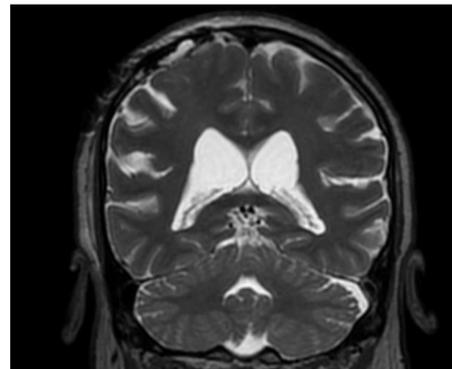


Figure 4. Postoperative MRI

Postoperative imaging showed resolution of herniation with stable reconstruction (Figure 4).

Key Post-operative Outcomes
Resolution of intracranial herniation
Stable dural and cranial reconstruction
No new neurological deficits

Discussion

Typical Imaging Features

- Inner table defect
- Preserved or thinned outer table
- Appearance resembling benign lytic calvarial lesions

Features of Present Case

- Biphasic calvarial destruction involving both inner and outer tables
- Parietal location overlying peri-Rolandic (eloquent motor) cortex
- Direct cortical abutment

Diagnostic Features

Diagnosis depends on:

- Continuity of brain parenchyma into the diploic space
- Associated dural defect

Important to distinguish from imaging mimics:

- Langerhans cell histiocytosis
- Epidermoid or dermoid cysts
- Arachnoid cysts

Management Principles

Treatment is guided by:

- Symptoms
- Interval growth
- Neuroanatomic context

In lesions abutting eloquent cortex:

- Preservation of functional brain
- Careful reconstruction rather than parenchymal excision

Surgical goals:

- Watertight dural reconstruction
- Restoration of cranial contour
- Prevention of further herniation
- Mitigation of seizure focus

Conclusions

This case illustrates a rare parietal intradiploic encephalocele with destruction of both calvarial tables. When MRI demonstrates herniated brain with an associated dural defect, intradiploic encephalocele should be strongly considered. Symptomatic or enlarging lesions typically require surgical management. Recognition of characteristic imaging features and adoption of a cortex-sparing reconstructive approach can achieve symptom control with stable reconstruction while avoiding functional compromise.

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