Case Report / *Olgu Sunumu*

Ege Journal of Medicine / *Ege Tıp Dergisi* 2026; 65 (3): 624-626

Bilateral epidural hematoma: A case report

Bilateral epidural hematom: Olgu sunumu

Gökhan Gürkan[1] Ramazan Özdemir[2] Ayşe Karataş Demirciler[2]
[1] Department of Neurosurgery, Medical Point Hospital, İzmir University of Economics, İzmir-Türkiye
[2] Department of Neurosurgery, İzmir Kâtip Çelebi University, İzmir-Türkiye

ABSTRACT

An epidural hematoma is usually caused by trauma. Bilateral epidural hematomas are less common but more serious. We present a case of a patient who presented with head trauma and underwent surgery due to the detection of bilateral occipital epidural hematoma on imaging. Bilateral and posterior location has higher risk but early intervention can significantly improve outcomes.

Keywords: Epidural hematoma, trauma, occipital, bilateral, extradural

ÖZ

Epidural hematom genellikle travmaya bağlı olarak gelişir. Bilateral epidural hematomlar daha nadir görülmekle birlikte daha ciddi klinik seyir gösterir. Bu olgu sunumunda, kafa travması sonrası başvuran ve görüntüleme incelemelerinde bilateral oksipital epidural hematom saptanması üzerine cerrahi tedavi uygulanan bir hasta sunulmaktadır. Hematomun bilateral olması ve posterior yerleşim göstermesi daha yüksek risk ile ilişkili olmakla birlikte, erken cerrahi müdahale klinik sonuçları belirgin şekilde iyileştirebilmektedir.

Anahtar Sözcükler: *Epidural hematom, travma, oksipital, bilateral, ekstradural.*

INTRODUCTION

Although extradural hematomas (EDH) are rare (1-2%), mortality rates range from 10% to 40%. Early diagnosis and treatment reduce this rate (5,8). Acute epidural hematoma is the most common traumatic neurosurgical emergency. Most epidural hematomas are unilateral. Bilateral epidural hematomas are rare associated with high mortality rate. They account for 0.1% to 0.3% of all head traumas. They comprise 2% to 10% of all adult acute epidural hematomas. Early diagnosis and a judicious surgical approach for bilateral epidural hematoma are necessary to minimize mortality and morbidity.

We present a case of a patient who presented with head trauma and underwent surgery due to the detection of bilateral occipital epidural hematoma on imaging.

CASE REPORT

A 34-year-old woman presented to the emergency room with a severe headache and stated that she fell while walking her dog. Physical examination revealed ecchymotic areas behind her right ear. Palpation revealed tenderness in the occipital region. She was diagnosed with known anxiety- and stress-related hypertension. She was conscious, oriented, and cooperative, with limited outward gaze in her left eye. Motor examination revealed full muscle strength. A brain CT scan revealed an epidural hematoma, predominantly on the right, extending bilaterally to the occipital region, measuring 23.4 mm at its widest point on the right and 12.6 mm at its widest point on the left. Multiple millimetric pneumocephalus foci were observed within the hematoma area (Figure-1). The patient underwent emergency surgery.

Corresponding author: Ramazan Özdemir
Department of Neurosurgery, İzmir Kâtip Çelebi University, İzmir-Türkiye
E-mail*: ramoozfe@gmail.com*
Application date: 13.07.2026 Accepted: 22.07.2026

A fracture line was observed, causing separation of the lambdoid suture on the right side and extending to the left occipital region. The large hematoma arising from venous origin was evacuated via a bilateral occipital craniotomy centered on the lambdoid suture on the right, extending to the transverse sinus and the midline. A postoperative CT scan showed a minimal epidural hematoma on the left side (Figure-2). Two weeks later, a control brain CT scan showed no residual collections. The patient had no additional postoperative neurological deficits and was discharged with recovery. Eye follow-up at 3 months revealed regression of the 6th nerve palsy in the left eye.

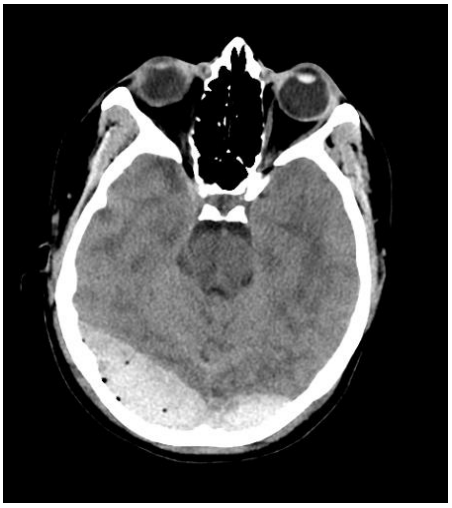

Figure-1. Preoperative axial non-contrast brain CT demonstrating a bilateral occipital epidural hematoma, predominantly on the right side, with extension across the midline. Multiple small pneumocephalic foci are also seen within the hematoma.

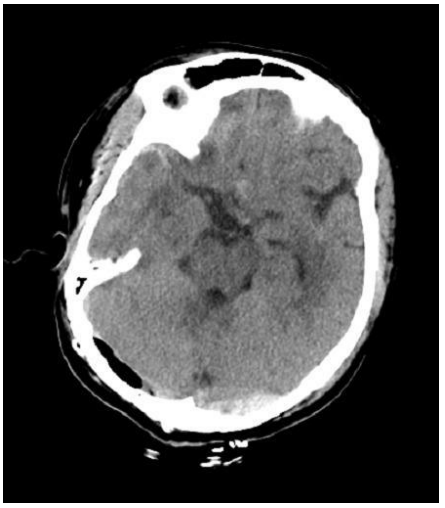

Figure-2. Postoperative axial non-contrast brain CT showing near-complete evacuation of the bilateral occipital epidural hematoma with a minimal residual collection on the left side.

DISCUSSION

Bilateral epidural hematoma was first described by Roy in 1884 who defined it as blood collection located between the internal table of the vault and the dura mater (3,8,9). Epidural hematomas often occur unilaterally. Bilateral epidural hematomas are very rare. Loss of consciousness has been reported at a higher rate in bilateral epidural hematomas. Despite the widespread use of CT scans in early diagnosis of bilateral epidural hematomas, the mortality rate remains high (15.7 % in a recent series), which is higher than that of unilateral forms (5%–7%) (7,9). Traumatic mechanisms are the main cause of epidural hematoma. Nevertheless, some reports have described cases of spontaneous bilateral epidural hematoma. They may be caused by pericranial inflammatory diseases, hemorrhagic tendencies due to coagulopathies, or vascular disorders of the dura mater (6). In bilateral epidural hematoma, the origin of the hemorrhage is generally mixed and associated with arterial and venous bleeding (2,4). The commonest symptom is worsening headache and vomiting (10). Identification of the higher number of cases with bilateral epidural hematoma without any loss of consciousness as in Dharker's and Gorgulu's series may have been due to the result of widespread use of cranial CT scan in head injury cases (2, 3). Stevenson et al. reported unilateral 6th cranial nerve palsy in their patient (11). Nayil, noticed bilateral abducent nerve palsy with papilledema in their patient (10). Increased intracranial pressure was most possibly the mechanism for both bilateral abducent nerve palsy and papilledema. Increased ICP leads to downward displacement of the brain which causes stretching of the abducent nerves against the petrous ridge especially Dorello's canal and hence giving rise to abducent nerve palsy (12). Most bilateral epidural hematomas are asymmetric, with one side predominant over the other, which makes deciding on the side for initial operation easy. In our case, the bleeding seemed to occur simultaneously. We suspect that the coup was on the right side, being responsible for the skull fracture. In our case, the bleeding was asymmetrical. The lambdoid suture was separated on the right side, and the fracture

extended to the left occipital region. A craniotomy was performed to visualize both the transverse sinus and the midline sagittal sinus to control potential bleeding. Mortality rates for bilateral epidural hematomas are reported in the literature as 42-100%. Early diagnosis and prompt surgical treatment are essential. Evacuation of bilateral hematomas in the same session is recommended.

CONCLUSION

Bilateral occipital epidural hematoma is a rare but life-threatening neurosurgical emergency associated with significant morbidity and mortality. Isolated abducens nerve palsy following head trauma may represent an early manifestation of increased intracranial pressure and should prompt urgent neuroimaging. Early radiological diagnosis, meticulous surgical planning, and simultaneous evacuation of bilateral hematomas are essential for favorable clinical outcomes. This case demonstrates that timely surgical intervention can result in complete neurological recovery and highlights the importance of prompt recognition and management of traumatic bilateral epidural hematomas.

Conflicts of interest: Authors declared no conflict of interest.

Funding: The author received no financial support for the research, authorship, and/or publication of this article.

References

1. Barlow P, Kohi YM. Acute simultaneous bilateral extradural hematoma. Surg Neurol. 1985;23:411-413. doi:10.1016/0090-3019(85)90219-8.
2. Dharker SR, Bhargava N. Bilateral epidural haematoma. Acta Neurochir (Wien). 1991;110:29-32. doi:10.1007/BF01402044.
3. Görgülü A, Çobanoğlu S, Armağan S, Karabağli H, Tevrüz M. Bilateral epidural hematoma. Neurosurg Rev. 2000;23:30-33. doi:10.1007/s10143-000-0028-2.
4. Hooper R. Observations on extradural haemorrhage. Br J Surg. 1959;47:71-87. doi:10.1002/bjs.18004720114.
5. Jamieson KG. Extradural and subdural hematomas: changing patterns and requirements of treatment in Australia. J Neurosurg. 1970;33:632-635. doi:10.3171/jns.1970.33.6.0632.
6. Kuwayama N, Takahashi S, Sonobe M, Sugita K. Spontaneous bilateral extradural hematomas: case report. J Neurosurg. 1985;62:139-141. doi:10.3171/jns.1985.62.1.0139.
7. Miki K, Shigemori Y, Oshiro S, Yasuda M, Inoue T. Bilateral acute traumatic epidural hematoma due to coup and contrecoup head injury: a case report and review of the literature. Emerg Med Investig. 2016;1:55-63.
8. Pereira EL, Rodrigues DB, Lima LO, Sawada LA, Hermes MN Jr. Bilateral asymmetric epidural hematoma. Surg Neurol Int. 2015;6:14. doi:10.4103/2152-7806.150458.
9. Gader G, Jemel N, Krifa MI, Bel Hadj Ali K, Rkhami M, Zammel I, et al. Asymmetric bilateral traumatic epidural hematoma: a report of a rare traumatic lesion. Korean J Neurotrauma. 2022;18(2):324-328. doi:10.13004/kjnt.2022.18.e45.
10. Nayil K, Laharwal M, Dhar A, Wani A, Ramzan A, Arif S. Vertex epidural hematoma with bilateral abducent nerve palsy: case report and literature review. Turk Neurosurg. 2012;22(2):257-260.
11. Stevenson GC, Brown HA, Hoyt WF. Chronic venous epidural hematoma at the vertex. J Neurosurg. 1964;21:887-891.
12. Takagi H, Miyasaka Y, Kuramae T, Ohwada T, Tsunoda M. Bilateral traumatic abducent nerve palsy without skull fracture or intracranial hematoma: a report of three cases and consideration of the mechanism of injury. No Shinkei Geka. 1976;4:963-969.