Bilateral Posterior Fossa Epidural Hematoma

—Report of Two Cases—

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Abstract

Two cases of posttraumatic bilateral posterior fossa epidural hematoma are presented. Such hematomas are extremely rare, but can be surgically cured. Computed tomography helps to establish the diagnosis and determine the neurosurgical treatment.

Key words: epidural hematoma, posterior fossa

Introduction

Bilateral posterior fossa epidural hematomas (EDHs) have been rarely reported.^{1,3,4,6,12)} The incidence of posttraumatic posterior fossa EDH is between 0.1 and 0.3% of all head injuries.¹¹⁾ The incidence of the posterior fossa EDH ranges between 1.2 and 12.9% of all EDHs,^{3,16)} but most posterior fossa hematomas are unilateral.^{2,5-11,14,15)} We report two cases of bilateral posterior fossa EDH.

Case Reports

Case 1: A 12-year-old boy fell from a height of about 3 m on July 4, 1991. Two hours after injury, he was admitted to our emergency unit. On admission, he was conscious without neurological deficits. Plain skull x-ray films showed no abnormalities. A computed tomographic (CT) scan showed a right occipital EDH of moderate size (Fig. 1A). Three days later, his consciousness deteriorated. An immediate CT scan showed a large bilateral posterior fossa EDH with supratentorial extension (Fig. 1B). He was immediately taken to the operating room. Liquefied hematoma under considerable pressure (about 110 ml) was evacuated through bilateral suboccipital burr holes. No evidence of a bleeding origin was found. A CT scan on the 9th postoperative day showed disappearance of the posterior fossa EDH (Fig. 1C).

The postoperative course was uneventful and he was discharged on day 10.

Case 2: A 26-year-old female was admitted about 3 hours after a road accident on July 18, 1991. On admission, she was drowsy, but free from focal neurological deficits. Plain skull x-ray films showed a fracture of the left occipital bone extending into the foramen magnum. Within 1 hour of admission, she became comatose. An immediate CT scan showed a bilateral posterior fossa EDH (Fig. 2A). She was taken to the operating room. A large EDH arising from the diploic vessels was evacuated *via* a right suboccipital craniectomy. A postoperative CT scan revealed a minimal EDH on the left (Fig. 2B). Twelve days later, a third CT scan showed that the hematoma on the left had decreased in density and size (Fig. 2C).

She was discharged on day 15 and was followed as an out patient. Serial CT scans showed that the left posterior fossa EDH had resolved over 6 weeks (Fig. 2D).

Discussion

Coleman and Thomson²⁾ reported the first successfully operated posterior fossa EDH in 1941. A total of 127 cases with posterior fossa EDH were described clinically between 1961 and 1987.⁶⁾ The introduction of CT has recently increased the number of reported cases.^{5-10,13-15)}

Bilateral posterior fossa EDH may combine with occipital EDH, as in our case, if the initial point of dural detachment and hemorrhage is over the

Fig. 1 Case 1. A: Initial CT scan, showing a right occipital EDH. B: CT scan 3 days after injury, showing a bilateral posterior fossa EDH. C: CT scan on the 9th postoperative day, showing disappearance of the posterior fossa EDH.

Fig. 2 Case 2. A: Initial CT scan, showing a bilateral posterior fossa EDH. B: Postoperative CT scan, showing a left posterior fossa EDH. C: CT scan on the 12th postoperative day, revealing decreased density and reduced size of the hematoma. D: CT scan 6 weeks after the operation, showing complete resolution of the posterior fossa EDH.

to establish the diagnosis and determine the neurosurgical indication.

CT based indications for surgery are as follows: 1) the maximum thickness of the EDH is more than 15 mm, 2) posterior fossa cisterns (e.g. the quadrigeminal and ambient cisterns) are poorly visualized, 3) marked deformity and/or displacement of the fourth ventricle, and 4) the hematoma extends to the supratentorial region and severely compresses the brain.¹⁰⁾ At surgery, a unilateral suboccipital craniectomy is adequate in the absence of gross hemorrhage from torcular herophili, as in our Case 2.

Posttraumatic posterior fossa EDHs are extremely rare, but can be surgically cured.

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midline. Close monitoring of such patients is necessary, especially when there is a fracture over the transverse sinuses or the foramen magnum. CT helps

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