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Letter to the Editor

5 Cases of traumatic double acute extradural hematoma in M. D. M hospital Jodhpur, Rajasthan, India

Sir,

Double acute EDHs are extremely rare. It is an uncommon consequence of closed head injury and the reported incidence ranges from 2 to 25% in different series.5. It may be unilateral or bilateral. Bilateral EDH may be symmetrical (same region on opposite site) or asymmetrical (different region on opposite site) (Table1).

As compared to single EDH, DEDH should be considered more urgently for neurosurgical intervention.

This report presents five cases (Table 1) of traumatic double EDH in M.D.M Hospital Jodhpur within 5 months of admission (26th May 2016 to 02nd October 16). The clinical details of all the five patients are given in (Table 1).

All were males except one (female) and the age ranged between 10 and 70 years. Arrival time at the hospital from the time of accident ranged between 5 and 9 hours (mean 7 hours). Mode of injury was either road traffic accident or assault.

Table 1: Report of cases studied.

Case	1	2	3	4	5
Age/sex	10 year/Female	25 year/Male	23 year/Male	28 year/Male	70 year/Male
Date of admission	02-10-16	26-05-16	15-06-16	16-06-16	01-09-16
Time between trauma and admission (hours)	8	6	9	5	8
Mode of injury	RTA	FFH	Assault	RTA	Assault
Gcs at time of injury	E3V4M5	E3V4M6	E4V4M5	E3V4M5	E2V3M5
Neurological findings:-	No paresis	No paresis	No paresis	No paresis	No paresis
Ct brain	Rt supra and infratentorial occipital EDH	B/ L frontal EDH	B/L parietal EDH	B/L EDH (Lt frontal and Rt temporal)	B/L parietal EDH
I/l or b/l edh	I/L	B/L(symmetrical)	B/L(symmetrical)	B/L(asymmetrical)	B/L(symmetrical)
Other ct Finding	pneumocephalus	Cerebral oedema	Left frontal h.contusion	Tentorial subarachnoid hemorrhage	Diffuse cerebral oedema
Technique of surgery	Rt parieto-occipital craniotomy	b/l frontal craniotomy (bicoronal flap incision)	b/l parietal craniotomy (bicoronal flap incision)	Lt frontal craniotomy and Lt temporal craniectomy	b/l parietal craniectomy (bicoronal flap incision)
Operative finding:- source of bleeding	Rt occipital # and Transverse sinus laceration	b/l frontal bone # and Superior sagital sinus laceration	b/l parietal bone # and Superior sagital sinus laceration	Left frontal and rt temporal bone #. right middle meningeal artery	b/l multiple parietal bone #
Blood loss	300 ml	500 ml	420 ml	320 ml	580 ml
Glosgow outcome scale (gos)	5	5	5	5	1 (death)

Glasgow Coma Scale (GCS) at the time of admission ranged between 10 (E2 V3 M5) and 13 (E3 V4 M6). Neither of these patients had focal neurological deficits. In all the patients, cranial computed tomography (CT) showed double EDH either unilateral or bilateral (symmetrical/asymmetrical) (Figure 1-5). Other CT findings were also described.

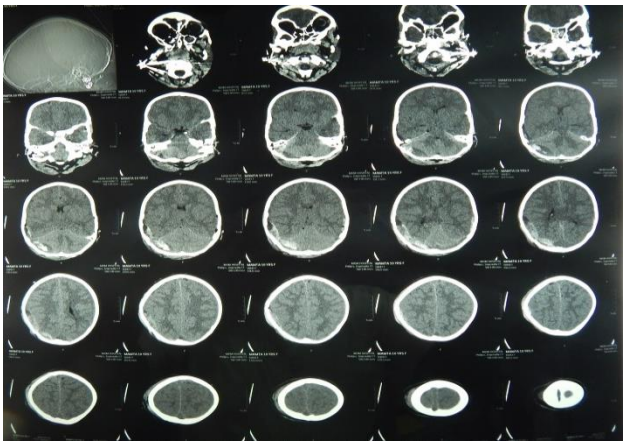

Figure 1 (A): Preoperative CT scan brain of case1.

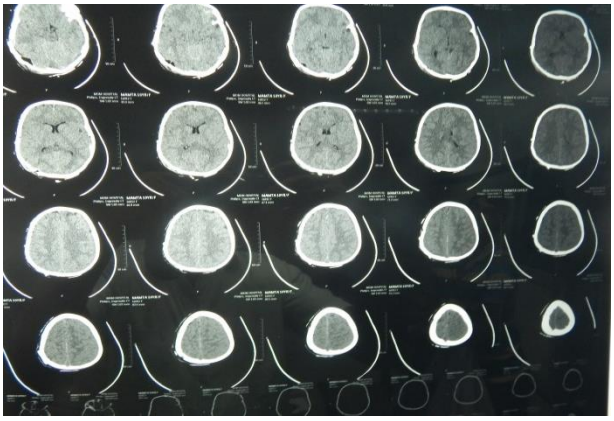

Figure 1 (B): Postoperative CT scan brain of case 1.

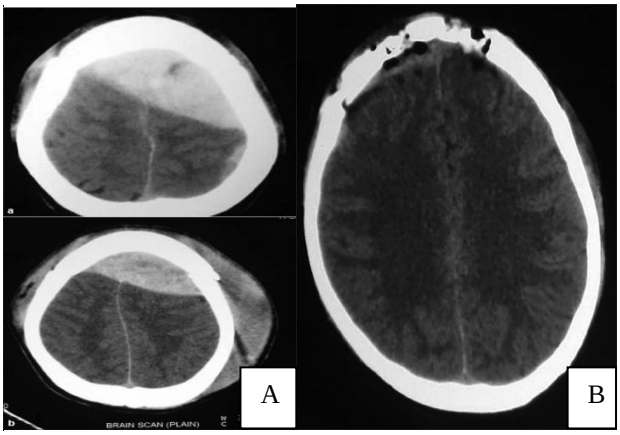

Figure 2: Postoperative and preoperative CT scan brain of case 2.

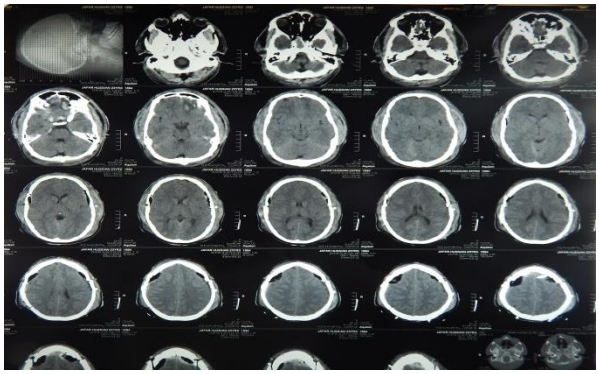

Figure 3(A): Postoperative CT scan brain of case 3.

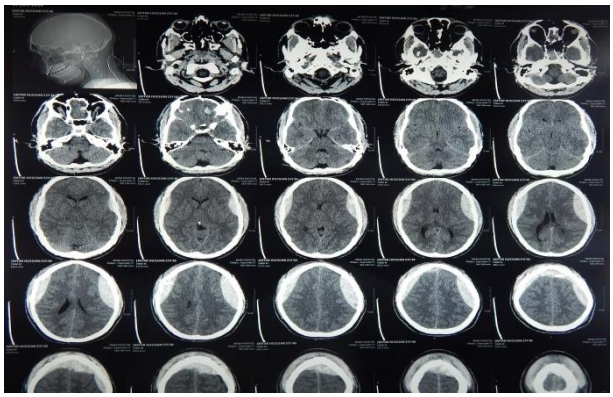

Figure 3(B): Preoperative CT scan brain of case 3.

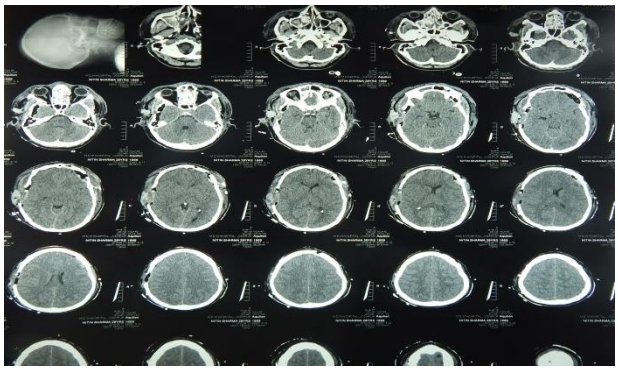

Figure 4(A): Postoperative CT scan brain of case 4.

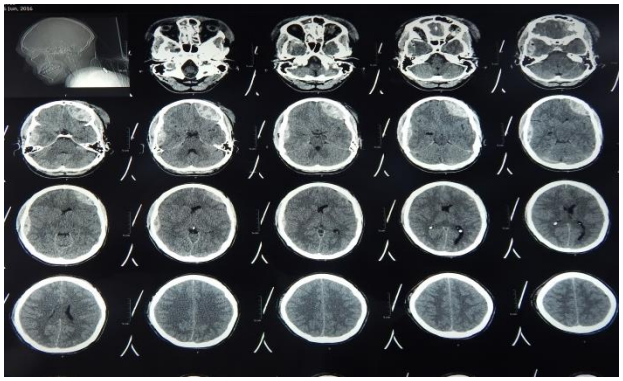

Figure 4 (B): Preoperative CT scan brain of case 4.

All the patients had cranial scalp flap with craniotomy extending according to site of EDH. Out of five, two (case 3 and 5) had B/L parietal EDH, which were operated by b/l parietal craniotomy (bicoronal skin incision) and source of bleeding was multiple bone # and superior sagital sinus laceration in both cases (Figure 3 and 5). One (case 2) had B/L frontal EDH, operated by bifrontal craniotomy (bicoronal skin incision) and source of bleeding was found to be superior sagital sinus laceration (Figure 2). Another (case1) had right sided supra and infratentorial occipital EDH, which was operated by parieto-occipital craniotomy and # bone as well as transverse sinus laceration were found to be source of bleeding (Figure 1). Finally (case 4) b/l asymmetrical EDH (left frontal and right temporal) was managed by left frontal craniotomy and right temporal craniectomy, # bone and MMA was found to be source of bleeding (Figure 4).

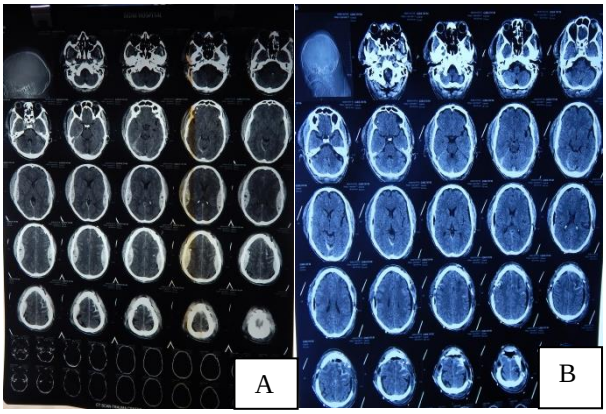

Figure 5: Postoperative and preoperative CT scan brain of case 5.

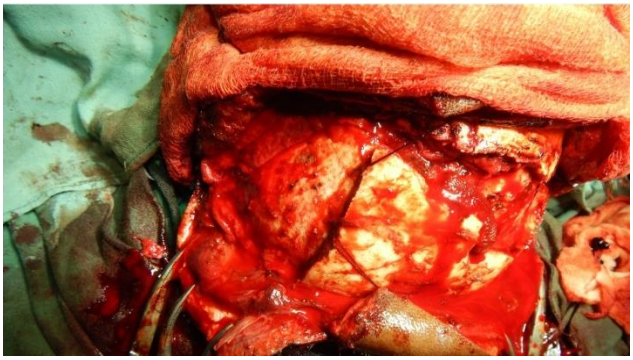

Figure 6: Intraoperative image of case 5.

Bilateral EDH results when dura mater is separated at two locations by a single directed impact.[1] Besides that, it can also occur due to extension of fracture line across midline, leading to bilateral EDH under fracture line, as was seen in our patients. Barlow and Kohi reported that in the case of bilateral EDH with different volumes, the side with a larger volume of hemorrhage has to be evacuated primarily, followed by the opposite side. When the volumes of the hematomas are equal, the dominant-sided hematoma is first evacuated.[2] In present patients, we evacuated hematoma through the respective site scalp flap incision with craniotomy extending to either side of midline (bilateral edh) (Figure 6 and 7) or same side (unilateral edh). Advantages of bicoronal flap incision in bilateral EDH (cases 2, 3, 5) are that evacuating hematoma of both sides in single exposure and most importantly, controlling bleeding from sinus are better as the midline is exposed.

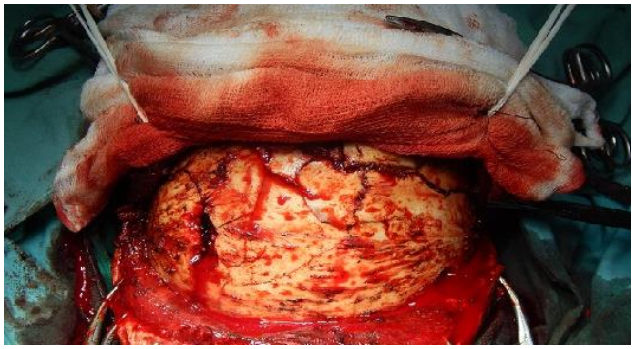

Figure 7: Intraoperative image of case 5.

The bleeding source was found to be due to bone #, MMA and sinus laceration. It was controlled with coagulation, sinoraphy and gel foam. Blood loss ranged between 300 and 580 ml (mean 440 ml). Patients required blood transfusions during surgery. All patients had GOS of 5 at follow-up except one which was died on 5th postoperative day. Prognosis depends on age, severity of injury, location of disease (CT findings) and other medical complications.

High mortality (42-100%) has been reported in previous series.[3,4] However, in present series, there was single death and the outcomes were excellent. This may be due to widespread use of CT scan, diagnosis before deterioration of neurological status and surgical methods adopted by us.

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