

# Conservative Management of Extradural Hematoma. A Report of five cases

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## Abstract

Extradural hematoma (EDH) forms 0.5% of all head injuries. In selected patients conservative management may be a feasible option. We report 5 cases which were managed conservatively without neurological sequelae. All patients were males between 18-30 (mean 23.4) years; location was frontal or parietal and volume of EDH between 9-23(mean 17.3) mL. However only patients with GCS 15/15 were considered for conservative management.

## INTRODUCTION

Extradural Hematoma (EDH) forms 0.5% of all head injuries.<sup>1</sup> Conventionally urgent evacuation is the accepted mode of management.<sup>2</sup> With the routine use of Computer Tomogram(CT) for management of head injury patients, nonoperative management is being used more often in selected patients.<sup>1,2,3,4</sup> Five cases of EDH which were managed conservatively and discharged without neurological sequelae, are reported here. The common factors amongst these cases have also been enumerated.

## MATERIALS AND METHOD

Patients having a traumatic EDH with a Glasgow coma Score (GCS) of 15/15 were included in the study. Other inclusion criteria were – Volume less than 25mL (as calculated by Peterson and Esperson equation),<sup>5</sup> absence of midline shift or mass effect and no other lesion on CT scan. Infratentorial EDH was excluded. All patients were monitored in a neurosurgical Intensive care unit. Specifically GCS, pulse, blood pressure, pupils were observed. The study did not interfere with the set neurosurgical protocols for head injury management.

## RESULTS

Out of 6 patients included one patient became drowsy and had to be operated. Five patients were successfully managed conservatively. Mode of injury was road traffic accident in all cases. A summary of the cases is shown in table 1. All patients were males in the age group 18-30 years (mean age 23.4 years), Location was in the parietal region in 3 cases; frontal in two, The volume of EDH ranged from 9mL –

23mL (mean 17.3mL). At no point of time did any of the five cases show any signs of raised intracranial pressure. Immediate neurosurgical care was available at all times.

## Figure 1

Table 1: Summary of cases

	Age(years)	Size (mL)	Location
1	18	9	Frontal
2	22	18.4	Parietal
3	28	19.2	Parietal
4	30	23	Parietal
5	19	17.3	Frontal

## DISCUSSION

Patients with EDH who are conscious have a mortality of almost nil.<sup>1</sup> Non operative management of EDH is well documented. Patient selection is of utmost importance in conservative management of EDH. Various factors have been found to influence the management strategy.

Volume : Dubey et al,<sup>3</sup> and Bezircioglu et al,<sup>6</sup> have recommended a volume of EDH less than 30mL for conservative management, Bullock et al,<sup>7</sup> found 12 -38mL suitable, whereas Giordano et al,<sup>8</sup> have managed patients with a volume upto 55mL, without surgery.

Location: Most studies have taken only supratentorial hematomas into consideration.<sup>3,4,5,6</sup> Wong,<sup>9</sup> reports a posterior fossa EDH volume less than 10mL to be favorably managed conservatively. Temporal EDH is unlikely to be managed conservatively,<sup>3,6</sup> as compared to frontal or parietal.

GCS: a lower GCS has been associated with a worse outcome in most studies<sup>1,3,10,11</sup>

Others factors like a thickness > 15mm and a midline shift > 5mm have also been found to unfavorably influence the outcome.<sup>12</sup>

Another important consideration is the timing of repeat CT scan. Sullivan et al<sup>13</sup> have shown that EDH enlargement occurs within 36 hours and a repeat CT is useful at this time. EDH enlargement occurred in 23% of patient and mean time to enlargement was 8 hours of injury.<sup>13</sup>

## CONCLUSIONS

Non operative management of EDH can be a safe option in carefully selected patients, where close monitoring is available.

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