

Surgical Management of Intracerebral Hematoma Due to Hypertension at CAIMS Hospital, Karimnagar

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ABSTRACT

Aim: To study the causes and prevention of high incidence intracerebral haematoma due to hypertension among rural population in and around Karimnagar area and to analyse results of surgical management at CAIMS hospital. Hypertension is a silent killer disease. Many times it is asymptomatic and neglected due to many reasons.

Method and Materials: In our study of 175 patients admitted in medical wards between February to July 2012. Twelve cases of intracerebral hematomas have been operated with variable results. Because of high morbidity and mortality prevention is better.

Results and Conclusion: Studies made by different workers on prevalence of hypertension in different parts of India were referred and analyzed and remedial measures have been discussed.

KEY WORDS: Hypertension, intracerebral hematoma, craniotomy, glasgow coma scale (GCS).

INTRODUCTION

Hypertension is a common disease among Indian population. It is one of the most treatable cause of mortality and morbidity in the elderly. Less than 50% of hypertensive patients are not aware that they are suffering from hypertension⁽¹⁾. Incidence in Delhi urban population is 22%, while in rural area around Delhi is 28%. (Male 38% and Female 29%)⁽²⁾. Worldwide about one billion are hypertensive's and 30% are undetected⁽³⁾! Most patients who are chronically uncontrolled hypertensives suffer end organ damage over time. Cerebrovascular accidents whether ischemic or hemorrhagic are very common among elderly. Patients with large hematomas with poor GCS (4-10) with CT showing mass effect were operated for life saving purpose. Decompressive craniotomy, hematoma evacuation, duroplasty are common procedures undertaken. However, the results are not very encouraging, because of age, poor general condition, co-morbid conditions like Diabetes, coronary artery disease, chronic kidney disease etc. So, control of hypertension is the best way to control intracerebral hematoma (ICH). And it is by timely detection and control of hypertension effectively.

MATERIALS AND METHODS

One hundred and seventy five patients admitted in medical wards between February-July 2012 were analysed. Incidence was high in age group of 60-70yrs, followed by 50-60yrs group. Relatively high mortality, morbidity among men than

in women (77/55). Twelve patients were operated. patients with Glasgow coma scale 4-10 were taken for surgery. Patients with GCS 3 were not operated due to high mortality. Out of twelve cases operated three were thalamic bleeds with ventricular extension and eight were capsuloganglionic area. One was on thrombolytic therapy. Large craniotomy, evacuation of hematoma and duroplasty was done. Depending on brain laxity, bone flap was replaced or discarded. Thalamic bleeds with ventricular extension were treated with external ventricular drainage (EVD) only (3 cases). Recovery was good among patients who undergone craniotomy. Thalamic hematomas with ventricular extension did not recover due to poor general condition. Patients operated on dominant hemisphere were more disabled. Mortality increased if patients remained for long time on ventilator, or fulminant infection or due to uncontrolled hypertension. Lobar hematomas were treated conservatively if GCS was good. Cerebellar hematomas were not operated during this period incidentally.

Surgical procedures available;

1. Simple burr hole aspiration.
2. CT guided stereotactic aspiration⁽¹⁰⁾.
3. Craniotomy, hematoma evacuation and duroplasty.
4. For thalamic bleeds with ventricular Extension : External ventricular drainage.

Indications and contraindications for surgical management;

TABLE – I Showing Age wise and Sex wise Incidence of Intracerebral Hemorrhage

| Age Group | Sex incidence | |
|-------------|---------------|--------|
| | Male | Female |
| 20-30 years | 10 | 5 |
| 30-40 years | 5 | 7 |
| 40-50 years | 11 | 9 |
| 50-60 years | 11 | 11 |
| 60-70 years | 21 | 10 |

American Heart Association and American stroke council have recommended following guidelines⁽⁴⁾

1. Patients with cerebellar hematomas >3 cm causing brainstem compression or 4th ventricle compression leading to hydrocephalus.
2. Moderate/large hematoma who are deteriorating clinically.
3. All other patients with CT scan showing midline shift >5mm.
4. GCS <4 or equal not to be operated due to high mortality and morbidity.

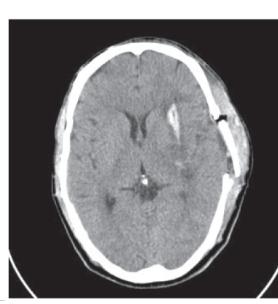
TABLE – II Showing Age, Sex, Site, Surgical procedure and Outcome of patients operated.

| S.NO | Age | Sex | Site of Hematoma | GCS | Procedure | Outcome |
|------|-----|-----|-------------------------|-------|-------------------------------|-----------|
| 1 | 55 | M | Capsuloganglionic left | 6/15 | Craniotomy & Decompression | Expired |
| 2 | 42 | M | Capsuloganglionic Right | 8/15 | Craniotomy & Decompression | Recovered |
| 3 | 55 | M | Capsuloganglionic Right | 8/15 | Craniotomy & Decompression | Recovered |
| 4 | 49 | M | Capsuloganglionic Right | 9/15 | Craniotomy & Decompression | Recovered |
| 5 | 65 | M | Capsuloganglionic Left | 10/15 | Craniotomy & Decompression | Recovered |
| 6 | 65 | F | Thalamic Bleed Right | 4/15 | Craniotomy & Decompression | Expired |
| 7 | 40 | F | Capsuloganglionic Left | 8/15 | Craniotomy & Decompression | Recovered |
| 8 | 35 | M | Thalamic Bleed Left | 8/15 | Craniotomy & Decompression | Recovered |
| 9 | 62 | F | Thalamic Bleed Left | 5/15 | External Ventricular Drainage | Expired |
| 10 | 55 | F | Capsuloganglionic Right | 5/15 | Craniotomy & Decompression | Expired |
| 11 | 50 | F | Thalamic Bleed Left | 4/15 | External Ventricular Drainage | Expired |
| 12 | 60 | M | Capsuloganglionic Right | 8/15 | Craniotomy & Decompression | Recovered |

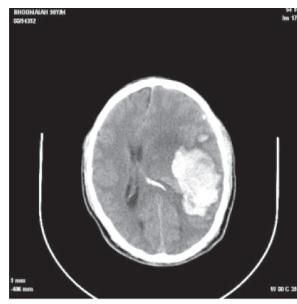
CT SCAN-PICTURES

**Figure 1:**

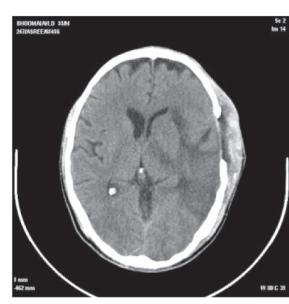
CT Scan showing Capsuloganglionic hematoma with mass effect.

**Figure 2:**

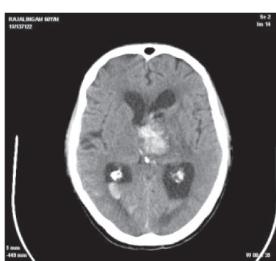
Post operative CT of the same patient.

**Figure 3:**

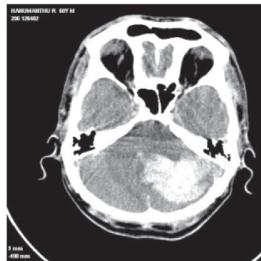
Massive hematoma with gross midline shift.

**Figure 4:**

Post operative CT of the same patient.

**Figure 5:**

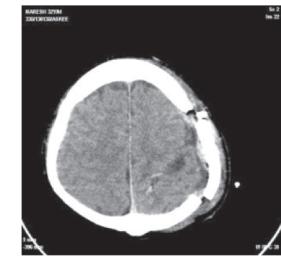
Left thalamic bleed with ventricular extension.

**Figure 6:**

Cerebellar hematoma.

**Figure 7:**

Lobar hematoma with ventricular extension.

**Figure 8:**

Post operative CT of the same patient.

RESULTS

In our study out of one seventy five (175) patients admitted in medical wards for evacuation of cerebro vascular accidents (CVA) twelve patients presented with massive hematoma with GCS 4-10 were operated. out of those five patients expired and seven patients recovered, one was due to thrombolysis. All the patients who recovered remained dependent for their daily activities of life at six months follow up. Results are slightly better in surgically treated group when compared to medically treated group. In advanced centres also results are not encouraging as far as neurological recovery is concerned.

DISCUSSION

All over the world many studies have been conducted. They failed to formulate definite guidelines for surgical management. Decision has to be taken depending on the merits and demerits of a particular case. American Heart Association and American Stroke Council have together given some guidelines which have already mentioned. Advanced age and hypertension (accelerated/uncontrolled/neglected) are commonest factors. Pathophysiological changes that occur in small arteries and arterioles due to sustained hypertension is regarded as the cause of Intracerebral hemorrhage. Cerebral amyloid angiopathy is the cause of bleeding in elders and in lobar hematomas. Vascular malformations, anticoagulant therapy and thrombolysis can also cause intracerebral hemorrhage.

Out of one seventy five patients admitted, Twelve were operated between Feb-July 2012. Seven were men and five were women. Mortality and morbidity were high due to poor GCS and need of prolonged ventilatory support, uncontrolled hypertension and infection. Cerebellar hematomas were not operated incidentally during this period. Three patients presented with thalamic bleeds with intraventricular extension were treated with external ventricular drainage (EVD). Nine patients presented with capsuloganglionic bleed with mass effect on Computerised Topography. Decompressive craniotomy and duroplasty was done in all cases. Five patients recovered. All are dependent till recent followup.

Arterial hypertension affects approximately one billion population and causes, 7.1 million deaths per year⁽³⁾. And 30% of which were undiagnosed⁽²⁾. The seventh report of Joint National committee (JNC7) on prevalence, Detection, Evaluation and treatment of hypertension were 28%. Only 25% of those found to be hypertensive were previously aware that they were hypertensives. Only 21% of those who were aware they were hypertensive's had regular checkups had their hypertension under control. Jacob John et al reported that 75% of the people are older persons¹. And 78% of them are aware of its presence. Another study by Yuvraj et al

reported that 19.1% are males and 17.5% are females in rural areas of Davangere in Karnataka states⁽⁵⁾. Lack of awareness and treatment of hypertension in rural areas might be due to non-availability and in accessibility of health services. Illiteracy and poverty may be the other reasons.

CONCLUSION

Health Education and awareness among the rural public regarding hypertension and its ill effects in the long run on health should be undertaken. Camps should be conducted to screen all the people above the age of 25, regularly. Every patient attending any clinic or hospital or nursing home should be screened for Hypertension, diabetes. Basic health workers can be trained for detection followed by treatment by qualified medical practitioners. People are encouraged to take vegetarian diet, fruits⁽⁷⁾ and to avoid smoking alcohol. Regular medication for hypertension and regular exercise can reduce Intracerebral hematoma significantly.

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