

Simultaneous (Near Simultaneous) bilateral basal ganglia bleed – A rarity

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Abstract

Intra-cerebral hemorrhages are a known cause of significant mortality and morbidity, among all the different forms of stroke. Primary multiple simultaneous intra-cerebral hemorrhages (MSICHs) are not common and has been reported in association with other diseases. There are only around 105 cases reported. The diseases most commonly associated are thrombophilia and hematologic disorders, vasculitis, neoplasms, arterio-venous malformation, anticoagulant therapy, illicit drug use, or multiple infarction with hemorrhagic transformation. Though the outcome is not much different, probably marginally worse compared to a regular stroke. Herein we describe a middle age male with hypertension who was referred to us with basal ganglia bleed.

Keywords: Bleeding, Hypertension, Infarct, Multiple, Primary, Simultaneous.

Case History

We describe a 36 years old male, known case of hypertension (HTN) on treatment, referred with history of basal ganglia bleed. He was treated three days ago in an outside hospital for left basal ganglia bleed, conservatively. Within 48 hours he developed left sided weakness and was intubated in view of low Glasgow coma scale (GCS). He was referred to us for further management.

At admission his vitals were as follows heart rate of 104/min, blood pressure was 210/100 mmHg, pupils bilateral equal and reacting to light, GCS- 4 +T (E2M2VET), flexor response of right lower limb to pain, bilateral upper limbs had extensor response to pain. A repeat computerised tomography (CT) brain showed bilateral basal ganglia bleed - one in right lentiform nucleus and internal capsule extending to corona radiata measuring 40X 25X 35mm with mild to moderate surrounding edema, another bleed in the left lentiform nucleus and internal capsule region extending to corona radiata measuring 30X 15X 30 mm with mild surrounding edema, intra-ventricular hemorrhage seen in occipital horn of right lateral ventricle, minimal midline shift of 2mm towards left side (Fig. 1).

His laboratory investigations were essentially normal with a hemoglobin of 14.9gms/dl, PCV-43.0, leucocyte count -16510/cumm, platelet count-2.19 lakh/cu mm, sodium was 137meq/Lt, potassium was 3.8meq/Lt, chloride was 104 meq/Lt, serum creatinine was 1.1mg/dl, blood urea nitrogen was 14 mg/dl, prothrombin time 14.2 /INR- 0.93 and activated partial thromboplastin time (APTT)- 24.8 s.

He was admitted to intensive care unit and connected to ventilator, blood pressure was lowered with intravenous anti-hypertensive which was later tapered and switched to oral anti-hypertensives. He was treated with mannitol, anti-epileptics (eptoin), and supportive care. Over the next 48 hours he remained stable. In view of the guarded prognosis and the futility of aggressive care and treatment, family wished to get discharged to a smaller rehab center due to logistical reasons.



Fig. 1: CT brain - Bilateral basal ganglia bleed with “OWL EYE” appearance

Discussion

Stroke is a debilitating condition with very high rates of mortality and morbidity, ranked fourth among all causes of death, following heart diseases, cancer and chronic lower respiratory diseases. The overall prevalence of stroke is approximately 3% in the general population. Spontaneous intra-cerebral hemorrhages constitute 10–20% of all strokes.¹ Among all the different types of strokes multiple simultaneous intra-cerebral hemorrhages (MSICH) is a rare entity even with today’s newer imaging capabilities (CT, MRI...).

Primary multiple simultaneous intra-cerebral hemorrhages (MSICHs) are defined as two discrete primary intra-cerebral hemorrhages occurring simultaneously or within 24hrs since the first identified intra-cerebral hemorrhage.¹ Primary MSICH’s are quite rare and has been reported with hematologic disorders, vasculitis, sinus thrombosis, neoplasm, arterio-venous malformation, anticoagulant therapy, illicit drug use, cerebral amyloid angiopathy, or multiple infarction with hemorrhagic

transformation.² MSICH occurring in hypertensive patients have been reported but simultaneous bilateral basal ganglia is a rare entity and been reported only in approximately 30 patients, so far.³

In a systematic review of all publications of MSICH,³ from 1950 to 2013, including case reports & case series, 105 cases were identified (Total of 248 cases and 143 cases excluded for various reasons). Of the 105 cases studied, the distribution of hematomas was considered to be more common in basal ganglia (45.83%) followed by thalamus (30.56%) and cerebellum (10.19%). MSICH's been more frequently encountered in males (60.95%); average age being 59.13±12.49 years. The average age of the female patients was higher 63.89±13.11 years. Patients with primary MSICH's had a survival rate of 56.20%. Primary MSICH's share features with solitary intra-cerebral hemorrhage regarding age, sex, location and distribution of hematomas, but had a poorer outcome ($p < 0.05$). Among the different subtypes of MSICHs; patients with bilateral basal ganglia hemorrhages, had the worst prognosis, highest mortality rate (60%) and lowest percentage of favorable outcomes(5.71%) and these findings were statistical significant. Similarly bilateral thalamic hemorrhages (47.37%), had a poorer outcome but was not statistical significant.⁵

Our patient was a male in his late thirties, presented with a bilateral basal ganglia bleed the left one was first and the right was noticed within 48 to 72 hours, (A CT was done after fresh left hemiplegia), after the initial bleed. In view of the above sequence of events and patient was referred from a rural hospital it is difficult to rule out that the bleed was not simultaneous., hence we have taken the liberty of calling it “near-simultaneous”.

In conclusion the site and extent of intracranial bleed helps in prognostication. When there is bilateral basal ganglia bleed it helps the treating physician to prepare the family for a poor outcome and to follow a more aggressive approach.

Conflict of interest: None.

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