Subdural Haematoma (SDH) Leading to Subfalcine Herniation in a Case of End Stage Renal Disease

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INTRODUCTION

Subdural haematoma (SDH) is characterized by bleeding into the sub dural space surrounding the brain. It is mostly associated with atraumatic brain injury. It usually results from tears in bridging veins that cross the subdural space. ESRD is a risk factor for SDH. Coagulation abnormalities, volume overload, haemodialysis and platelet dysfunction predispose to SDH in ESRD and increase the morbidity and mortality.[1] We report a case of a 44-year-old female, a known case of chronic kidney disease on maintenance haemodialysis who developed SDH with resulting subfalcine herniation.

PRESENTATION OF CASE

A 44 year old female, known case of chronic kidney disease on thrice a week haemodialysis since 1 year presented to us with a complaint sudden onset of drowsiness since 1 day. There was no history of fever, headache, vomiting, and convulsions.

On examinations - Pulse 58 / min, respiratory rate 12 / min, blood pressure 200 / 110 mm of Hg, SpO_2 at room air 92 %. CNS examination revealed; Glasgow Coma Scale - 11, III nerve palsy of right eye, left sided hemiparesis with extensor plantar response on left side. (Figure - 1 a, b)

Urgent non contrast CT scan of the brain was done which revealed; evidence of crescent shape mixed density predominantly hypodense collection in right fronto-temporo-parietal region of approximate size of 13.2 x 9.3 x 2.4 cms. (volume 147.3 cc), causing mass effect in from of buckling of grey white matter junction and compression of ipsilateral ventricle. There is evidence of midline shift of 18 mm to left side. Resulting into subfalcine herniation. (Figure 2) Urgent decompressive craniotomy was done with haematoma evacuation.

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Figure 1a. Ptosis of Right Eye; b. Outward and Downward Displacement of Eyeball with Mydriasis of Right Pupil Suggestive of Right IIIrd Nerve Palsy

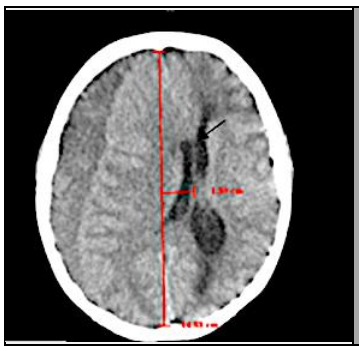

Figure 2. CT Brain Showing Midline Shift of 18 mm to Left Side Resulting into Subfalcine Herniation (Black Arrow)

DISCUSSION

Cerebral tissue shifting from its normal location refers to cerebral herniation that results in mass effect in adjacent space. Subfalcine herniation, also known as cingulate hernia, is the most common form of cerebral herniation. It is generally caused by unilateral frontal, parietal or temporal lobe disease that creates a mass effect due to raised intra cranial pressure resulting in medial shift of the ipsilateral cingulate gyrus beneath the free edge of the falx cerebri. SDH is 4.47-fold higher in the haemodialysis patients with a thirty-day mortality of approximately 40 %.[1,2] The incidence of the SDH is more in ESRD and haemodialysis patients as compare to general population.

ESRD patients on long term haemodialysis are usually volume overloaded. This volume overload state causes venous hypertension and with superadded platelet dysfunction and use of heparin in haemodialysis leads to small venous tears of dural bridging veins causing SDH.[3] Herniation of brain tissue is a life-threatening condition that requires immediate diagnosis and treatment. Subfalcine herniation caused by midline brain shift may result in compression of anterior cerebral artery branches against the fixed falx cerebri, causing infarcts in an anterior cerebral artery distribution.[4] Evacuation of haematoma by craniotomy or craniectomy is the treatment of choice.

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