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Case Series on Rapid Spontaneous Resolution of Massive Acute Sub Dural Haematoma

Dr. Abhinav Bansal, Dr. Siddhant Kumar, Dr. Arushi Dhall, Dr. Vikul Kumar Tyagi
Corresponding Author: Dr. Siddhant Kumar

Chhatrapati Shivaji Subharti Hospital, Meerut

Abstract:
- *We are reporting a case of 60-year-old female with head injury due to road traffic accident, NCCT head s/o Right sided acute SDH. Patient improved clinically en route to the hospital and repeat NCCT done after 14 hours showed marked resolution of Sub Dural Haematoma.*
- *Similarly a 40 year old female with head injury due to a road traffic accident, NCCT head s/o Left sided acute SDH improved clinically under observation and repeat NCCT head done after 12 hours showed marked resolution of Sub Dural Haematoma*
- *Proposed mechanism of spontaneous resolution was dilution and washing out of haematoma due to a tear in the arachnoid membrane by CSF.*
- *As a clinician one should keep an eye out for patients who do not deteriorate while awaiting surgery with NCCT having characteristics of SAH and a repeat CT scan should be done before any surgical intervention.*

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I. Introduction:

- Acute SDH, with thickness more than 10mm require immediate surgical evacuation in most situations.
- Rarely, rapid spontaneous resolution of acute SDH can occur.
- It has been theorised that :
- The hematoma is diluted by CSF flushing from a tear in the arachnoid membrane.
- Cerebral oedema compresses the haematoma redistributing it in the sub dural space or extracranially
- We can avoid surgical intervention in such cases if diagnosed in time. We are presenting a case with spontaneous resolution of acute SDH, discussing the mechanisms involved and possible indicatory factors.

CASE REPORT- I

- A sixty-year-old lady suffered a road traffic accident with L.O.C. +ve, Vomiting – 1 episode, no history of ENT bleed or seizures.
- NCCT Head done one hour after trauma was suggestive of Acute sub dural haematoma in Right FrontoTemporo – Parietal Region with a maximal thickness of 13mm causing a midline shift of 10mm to the left side associated with diffuse cerebral oedema and Sub Arachnoid Haemorrhage.
- She was then referred to our hospital for further management. Patient improved clinically during transportation and on admission in our hospital was conscious, oriented to time, place and person.
- GCS : E4V5M6. Routine investigations done for the patient showed severe anaemia (Hb : 7.6gm/dl).
- Patient was planned for emergency craniotomy after blood transfusion and kept under strict monitoring in the Intensive Care Unit. Two units PRBC transfused over the next 6 hours and the pt was started on antiepileptics and mannitol.
- Repeat NCCT done after 14 hours showed markedly resolved acute sub dural haematoma (maximum thickness of 3mm) and sub arachnoid haemorrhage noted along posterior falx cerebri.
- Patient continued to improve clinically and was discharged on the 11th day without any neurological deficit.

CASE REPORT – II

- A forty-year-old lady suffered a road traffic accident –L.O.C. +ve, Vomiting – 2 episodes, H/O Left ear bleed.
- No h/o seizures; nasal/oral bleed.
- NCCT Head done one hour after trauma was suggestive of Acute sub dural haematoma in Left Fronto-Temporo Region with a maximal thickness of 8mm causing a midline shift of 6mm to the right side

associated with diffuse cerebral oedema ,Sub Arachnoid Haemorrhage and multiple areas of haemorrhagic contusions.

- Patient on admission in our hospital was conscious with a GCS of E3V4M6 and b/l reactive pupils.
- Patient was kept under strict monitoring in the Intensive Care Unit and started on antiepileptics and mannitol.
- Repeat NCCT done after 12 hours showed markedly resolved acute sub dural haematoma (maximum thickness of 3.4mm) and a contusion noted in the right parietal lobe.
- Patient continued to improve clinically and was discharged on the 5th day without any neurological deficit.

II. Discussion:

- A Subdural haematoma of greater than 10mm maximum thickness or causing a midline shift of more than 5mm is considered operative.
- Rapid spontaneous resolution is a rare occurrence, a pre-emptive diagnosis of this can avoid unnecessary surgery.

Proposed mechanisms with their radiological pointers:

- The presence of SAH in such patients could indicate partial distribution of haematoma in Subdural and sub arachnoid spaces; this along with hypodensity on the outside of the clot are signs of a resolving clot.
- Redistribution of clot can occur extra cranially due to fracture or sutural diastasis. In our case the patient had a right temporal linear fracture, and subsequent NCCT Head showed increasing scalp haematoma. Thus, complimenting this hypothesis.
- Intracranial redistribution occurs due to a tear in the arachnoid membrane that leads to CSF flow in the subdural space and helps in flushing of the haematoma. CSF can be seen as a low-density band as a hypodensity between the hematoma and the inner table of skull.
- Anaemia may also be a contributing factor as low PCV makes the haematoma more amenable to being flushed.

Fig. 1- CASE REPORT I
NCCT Head done 1hr after trauma s/o Right Fronto- temporo parietal acute SDH with 13mm thickness and 10mm midline shift.

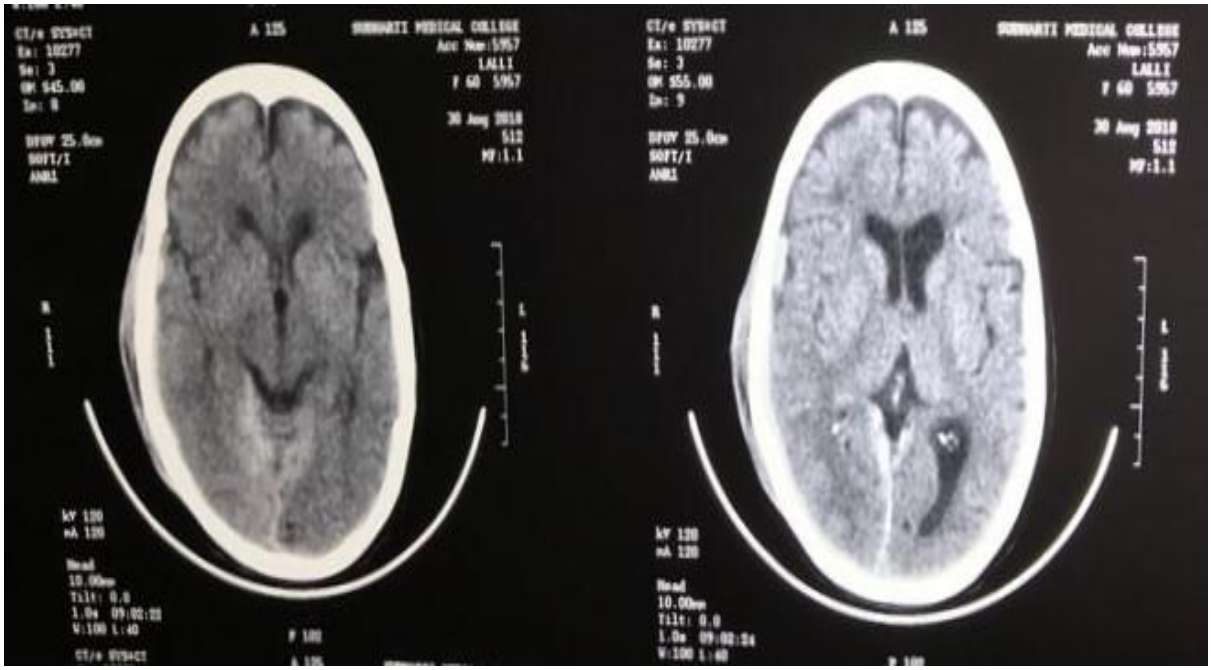

Fig. 2 - CASE REPORT I

Repeat NCCT Head after 14 hours suggestive of grossly decreased acute SDH with maximal thickness of 3mm; SAH, increased scalp hematoma and a low density band between hematoma in inner table of skull.

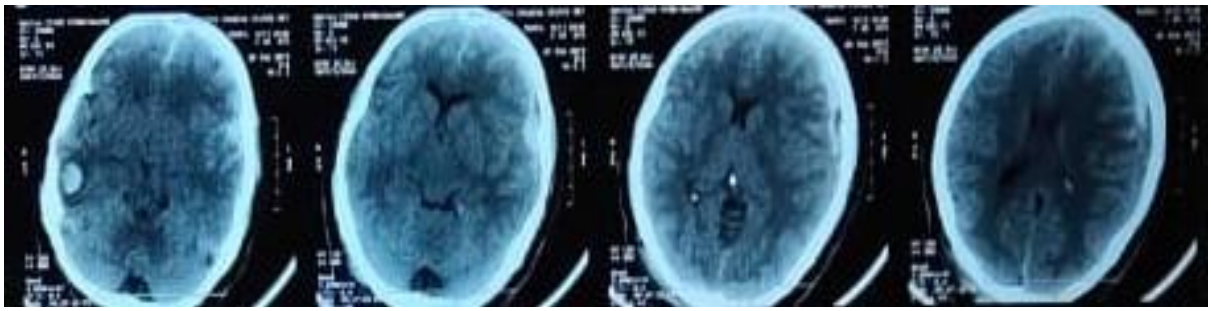

Fig. 3- CASE REPORT II

NCCT Head done 1hr after trauma s/o Left Fronto- temporo acute SDH with 8mm thickness and 6mm midline shift and right temporal contusion

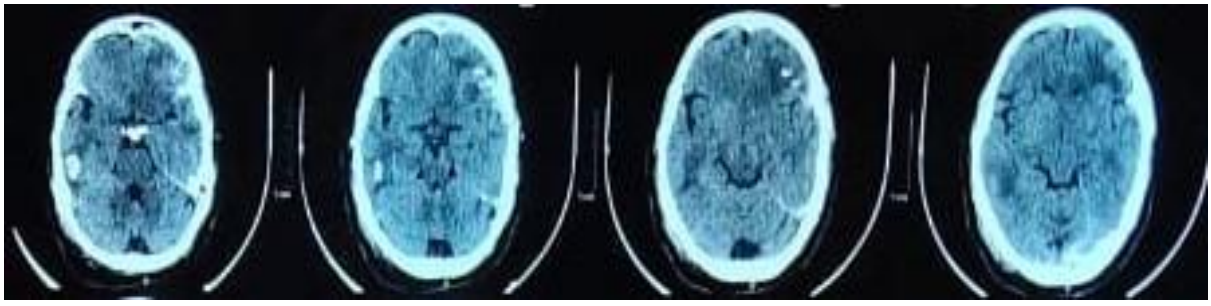

Fig. 4 - CASE REPORT II

Repeat NCCT Head after 12 hours suggestive of grossly decreased acute SDH with maximal thickness of 3mm; negligible midline shift and a resolving Right Temporal Contusion.

III. Conclusion:

- In a case with any of the above radiological pointers if the patient is stable and there is a delay in surgery for any reason – a repeat NCCT scan should be done.

- This may keep the patient from an unnecessary surgical intervention.
- In our case, CSF flushing and following further redistribution intracranially would be the probable mechanism of resolution.

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