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Case History
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Unveiling the Underlying: Subdural Hemorrhage Reveals Aplastic Crisis in Patients with Altered Sensorium

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Abstract

Aplastic Anemia (AA) is a condition where the bone marrow fails to produce adequate amounts of blood cells, leading to pancytopenia. Patients with AA are particularly susceptible to hemorrhagic complications due to severe thrombocytopenia. This case highlights the critical importance of prompt recognition and management of bleeding complications in AA, which can have severe neurological consequences such as subdural hemorrhage.

Case History

A 54-year-old previously healthy female presented to the emergency department with altered sensorium, persistent gum bleeding, fever, vomiting, and a history of rectal bleeding. She reported progressive symptoms over the past several days, including confusion and lethargy. Her past medical history included appendicitis, for which she declined surgical intervention. She denied any history of breathlessness, hematuria, or similar bleeding episodes. On arrival vitals were temp:99.2, PR:62/min, BP:140/90 mm-hg, Spo2:98% on room air, RBS:136 mg/dl.

Diagnosis

On physical examination, the patient exhibited signs of pallor and widespread purpura, with normal vital signs initially recorded. Neurological examination revealed an altered level of consciousness with a Glasgow Coma Scale (GCS) score of E4V3M5, indicating moderate impairment. Cranial nerve function and sensation were intact.

Initial blood tests revealed pancytopenia (Table 1) with severe thrombocytopenia. Magnetic Resonance Imaging (MRI) of the brain showed a subdural hematoma (Figures 1 and 2) and cerebral venous sinus thrombosis, suggesting a hemorrhagic complication due to underlying AA. Additional viral markers for hepatitis, HIV, CMV, and EBV were negative.

Further investigations confirmed the severity of the hematological abnormalities. Blood tests showed hemoglobin at 5 g/dL, white blood cell count of 1,000/μL, and platelet count of 10,000/μL. The MRI findings were consistent with subdural hematoma with sinus thrombosis. The bone marrow biopsy revealed hypocellular marrow with marked reduction in all hematopoietic cells, confirming the diagnosis of AA [1-3].

Management

The patient was promptly started on broad-spectrum intravenous antibiotics, including

Table 1: Blood test results indicating pancytopenia.

Date	Hb	WBC	Platelet	PT/INR	aPTT
27/4/2024	5	1000	10,000	12.90/1.09	20.6
28/4/2024	6.1	2830	61,000		
29/4/2024	9.6	2470	64,000		
30/4/2024	8.9	2380	28,000	13.02/1.10	21
1/5/2024	9.6	2270	15,000		
4/5/2024	10.6	2460	21,000		
9/5/2024	11.5	2870	40,000		
14/5/2024	12.1	3370	88,000		
18/5/2024	12.1	4400	1,20,000	13.05/1.12	22

OPEN ACCESS

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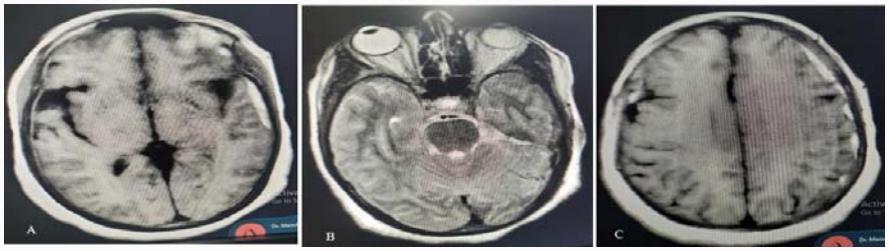
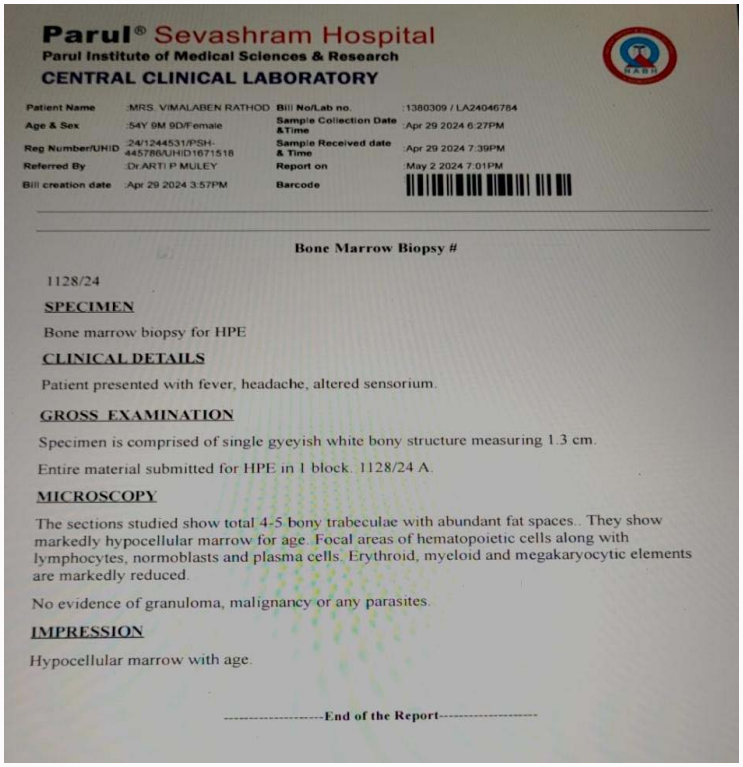


Figure 1: MRI scan showing subdural hematoma. **(A):** T1 sequence hyperintense SDH along left temporal convexity. **(B):** T2 sequence hypointense SDH along left temporal convexity. **1(C):** FLAIR hyperintense signal noted involving left fronto-parietal lobe + right frontal lobe convexity (SDH).



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Patient Name	:MRS. VIMALABEN RATHOD	Bill No/Lab no.	:1380309 / LA24046784
Age & Sex	:54Y 9M 9D/Female	Sample Collection Date &Time	:Apr 29 2024 6:27PM
Reg Number/UHID	:24/1244531/PSH-445786/UHID1671518	Sample Received date & Time	:Apr 29 2024 7:39PM
Referred By	:Dr.ARTI P MULEY	Report on	:May 2 2024 7:01PM
Bill creation date	:Apr 29 2024 3:57PM	Barcode	

Bone Marrow Biopsy #

1128/24

SPECIMEN

Bone marrow biopsy for HPE

CLINICAL DETAILS

Patient presented with fever, headache, altered sensorium.

GROSS EXAMINATION

Specimen is comprised of single gyeyish white bony structure measuring 1.3 cm.

Entire material submitted for HPE in 1 block. 1128/24 A.

MICROSCOPY

The sections studied show total 4-5 bony trabeculae with abundant fat spaces.. They show markedly hypocellular marrow for age. Focal areas of hematopoietic cells along with lymphocytes, normoblasts and plasma cells. Erythroid, myeloid and megakaryocytic elements are markedly reduced.

No evidence of granuloma, malignancy or any parasites.

IMPRESSION

Hypocellular marrow with age.

----------End of the Report----------

Figure 2: Bone marrow biopsy confirming Aplastic Anemia.

Meropenem at a dose of 1 g every 8 hours and Vancomycin at a dose of 15 mg/kg every 12 hours, to cover for possible sepsis. To manage her neurological symptoms and prevent further complications, she was administered intravenous Levetiracetam at a dose of 500 mg twice daily as an antiepileptic, and intravenous Mannitol at a dose of 0.5 g/kg over 15 minutes to reduce intracranial pressure.

In the Intensive Care Unit (ICU), the patient received multiple transfusions of packed red blood cells and platelets to correct the pancytopenia. Immunosuppressive therapy was initiated with intravenous Thymogam (Anti-thymocyte globulin) at a dose of 10 mg/kg/day for 4 days, Cyclosporin at a dose of 5 mg/kg/day, and Methylprednisolone at a dose of 2 mg/kg/day. Additionally, she was started on Romiplostim at a dose of 1 µg/kg weekly to stimulate platelet production.

Discussion

Patients with AA are at an increased risk of severe hemorrhagic complications due to profound thrombocytopenia. The development of a subdural hematoma and sinus thrombosis in this patient underscores the importance of early recognition and aggressive management of bleeding complications in AA. The multidisciplinary approach, including hematology, neurology, and critical care, was crucial in stabilizing the patient and addressing the underlying cause.

Outcome

After intensive treatment and supportive care, the patient showed significant improvement in her neurological status and hematological parameters. She was discharged with a plan for close follow-up and continued immunosuppressive therapy. At follow-up visits, she exhibited no neurological deficits, and her blood counts were stable

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