



ERYTHROCYTAPHERESIS IN A SICKLE CELL DISEASE PATIENT WITH A THALAMIC SPACE OCCUPYING LESION: A CASE REPORT

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BACKGROUND

- ❖ A 52-year-old female was admitted to the neurosurgery ward with intermittent headaches persisting for one and a half years,
- ❖ associated with vomiting, slow responsiveness, and generalized weakness. CT head revealed right thalamic space-occupying lesion (SOL) with significant perilesional edema and mass effect
- ❖ which required urgent surgical intervention. She was also detected to have homozygous Sickle Cell Disease (SCD).
- ❖ RBC exchange was performed to provide immediate relief by rapid decrease in sickle hemoglobin (HbS) concentration and blood viscosity of patient

CASE DESCRIPTION

- ❖ Urgent automated RBC exchange was scheduled to lower the hemoglobin S (HbS) levels to below 30%.
- ❖ During the procedure, the patient was intubated,
- ❖ Spectra Optia (TERUMO-BCT) cell separator machine was used
- ❖ Femoral line access was used (HD Catheter 11.5f)
- ❖ PRBC bag hematocrit ~(65%)
- ❖ pre procedure HbS (72.6%),

- ❖ Prophylactic calcium gluconate infusion was given The procedure was uneventful, Post procedure HbS concentration decreased from 72.6% to 14.8% and Hematocrit also increased from 27% to 29.3% after the procedure..
- ❖ Patient underwent right fronto-temporo-parietal (FTP) craniotomy with near total excision (NTE) of lesion on day 5 of the RBC exchange. Surgery was uneventful and patient was stable.

DISCUSSION

- RBC exchange reduces upto ~85% of iron loading compared to simple transfusion. When used as the initial form of transfusion,
- It can prevent iron overload and might allow cessation of iron chelation in well-chelated patients.
- It requires more blood compared to manual exchange and simple transfusion.

Table 1: PRE-PROCEDURAL AND POST-PROCEDURAL HEMATOLOGICAL PARAMETERS

Parameters	Before RBC exchange	After RBC exchange
Hb (g/dL)	8.8	10.1
Hematocrit (%)	27	29.3
Hb S (%)	72.6	14.8
Hb F (%)	20.3	4.5



CONCLUSION

- ❑ This case report emphasises the pivotal role of automated RBC exchange in the perioperative management of SCD patients requiring urgent thalamic lesion surgeries.
- ❑ The technique's effectiveness in lowering hemoglobin S (HbS) levels and mitigating surgical risks showcases its importance as a pre-operative measure, enhancing the safety and outcomes of surgical interventions in this patient population.

REFERENCES

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