



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

1.Pinjari Chinigi Sab 2.Soumya Das 3.Rounak Dubey 4.Sucheta Shrikant Meshram 5.Vishvdeep khushoo 6.Varidh Katiyar 7.Juilee Shalik Charmode 8.Aishwarya V

1.Senior Resident, Dept. of Transfusion Medicine 2.Associate Professor and Head Dept. of Transfusion Medicine 3.Assistant Professor, Dept. of Transfusion Medicine 4.Associate Professor, Dept. of Anesthesiology and critical care 5.Assistant Professor, Dept. of Clinical hematology 6.Assistant Professor, Dept. of Neurosurgery 7.Senior Resident, Dept. of Transfusion Medicine 8.Senior Resident, Dept. of Transfusion Medicine, AIIMS NAGPUR.

BACKGROUND

- ❖ Sickle cell disease is one of the most common autosomal recessive genetic disorder. Surgical procedures in SCD patients pose unique challenges due to risk of perioperative mortality, vaso-occlusive crisis, acute chest syndrome, post-operative infections and congestive heart failure.
- ❖ RBC exchange was performed to provide immediate relief by rapid decrease in sickle hemoglobin (HbS) concentration and blood viscosity of patient
- ❖ A 52-year-old female was admitted to neurosurgery ward with intermittent headaches 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 required urgent surgical intervention.
- ❖ K/c/o Homozygous Sickle Cell Disease (SCD). pre procedure HbS (72.6%),

PROCEDURAL DESCRIPTION

- ❖ Urgent automated RBC exchange was scheduled to lower the hemoglobin S (HbS) levels to below 30%.
- ❖ Spectra Optia (TERUMO-BCT) cell separator machine was used
- ❖ 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.

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



DISCUSSION

- ❖ According to the American Society for Apheresis (ASFA), RBC exchange is performed for the indication of pre-operative management with sickle cell disease, which falls under category III and grade 2A as a recommended treatment option
- ❖ Automated RBC exchange offers more efficient compared to manual RBC exchange as it is less time consuming and helps in rapid removal of HbS RBCs while keeping the patient isovolemic.

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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