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# ANAESTHETIC MANAGEMENT OF YOUNG MALE WITH SICKLE CELL DISEASE POSTED FOR OPEN CHOLECYSTECTOMY

Anesthesiology

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## ABSTRACT

**Introduction:** An hereditary form of chronic haemolytic anaemia known as sickle cell disease is accompanied by a variety of acute, painful, and vaso-occulusive episodes. The main molecular process behind clinical symptoms is polymerisation of hb-s following deoxygenation. The well-known consequence of prolonged haemolysis is cholelithiasis. **Case Report:** A 33-year-old man with known sickle cell disease came with 15 days of yellowish discoloration of the mucous membranes, eyes, skin, and skin around the mucous membranes, as well as 10 days of stomach discomfort. He has been receiving frequent blood transfusions and Tab. hydroxyurea for 25 years. Using an ultrasonogram, cholelithiasis was identified, and an open cholecystectomy was scheduled. Prior to surgery, the patient began incentive spirometry. To prevent dehydration, he was kept off of NBM after midnight and put on RL at 100 ml each hour. A thoracic epidural catheter was inserted in the T11-T12 area while under local anaesthesia since the coagulation profile was normal. **Discussion:** The clinical hallmarks of SCD, vaso-occlusive phenomena and haemolysis, cause a variety of significant organ system problems as well as repeated painful episodes. To avoid acute chest syndrome and atelectasis, extensive preoperative spirometry was performed. The entire time, enough hydration was kept up. To avoid hypoxia and hypotension, the induction and intubation processes were carried out with the utmost care. To avoid hypothermia, high, warm intravenous fluids were administered, and an epidural infusion was employed to deliver sufficient analgesia. **Conclusion:** Successful care of sickle cell disease requires meticulous anaesthetic control, including preoperative exchange transfusion, avoidance of acidosis, hypoxia, hypothermia, and hypovolemia, as well as maintaining adequate intraoperative and postoperative pain relief using epidural infusion.

## KEYWORDS

Sickle cell disease, Open cholecystectomy

## INTRODUCTION

Sickle cell disease an inherited chronic haemolytic anaemia , associated with variable number of acute painful and vaso-occulusive episodes. Polymerisation of hb-s after de oxygenation is the fundamental molecular event that underlies clinical manifestations. Cholelithiasis is the well recognized complication of chronic haemolysis.

## CASE REPORT

A 33 year old male who is known case of sickle cell disease presented with yellowish discoloration of eyes , skin ,mucous membranes since 15 days & abdominal pain since 10 days. He is on Tab. hydroxyurea and on regular blood transfusion for 25years .diagnosed with cholelithiasis by ultrasonogram and posted for open cholecystectomy . On examination, he was moderately built & nourished .Icterus present . His Hb-12gm%,PCV36.2%,platelets-4lakhs/mm3,Total bilirubin -47mg/dl, direct bilirubin-20mg/dl, indirect -27mg/dl, PT15.5secs, INR-1.1

HbELECTROPHOROSIS-
HbS69.6%,
HbF-19.2%,
Hb A-8%.

As Hb S was 69.6%, he underwent partial exchange transfusion . Post transfusion Hb S reduced to 33%.Patient was started on incentive spirometry preoperatively. He was kept NBM after 12 midnight &started on RL @100ml/hr to avoid dehydration .As coagulation profile was normal, thoracic epidural catheter was placed in T11- T12 space under local anesthesia. Vaso-occlusive phenomenon and haemolysis ,the clinical hallmarks of SCD ,result in recurrent painful episodes and a variety of serious organ system complications. Preoperative evaluation is very important in SCD , we have done ABG to rule out hypoxia and acidosis .we ordered for exchange transfusion as our case had very high HbS levels .Preoperative intensive spirometry was done to prevent acute chest syndrome and atelectasis. Adequate hydration was maintained throughout. Utmost care was taken during induction and intubation to prevent hypoxia and hypotension. Intraoperatively maintained with Atracurium as bilirubin levels were very high, warm iv fluids were used to prevent hypothermia and adequate analgesia was provided with epidural infusion. Postoperatively control of infections, maintaining normal Hb and PCV is essential . Patient was premedicated , preoxygenated , induced and intubated Maintained with 02+N2o+sevoflurane+ atracurium and continuous epidural infusion of 6ml/hr of 0.25%bupivacaine. warm fluids were given .intraoperative. ABG was normal. patient remained stable throughout the surgery. After completion of surgery patient was extubated and shifted to postop icu postoperative period was uneventful, patient kept in Propped up position and spirometry re-initiated by postop day 2,epidural analgesia was given for 3 days.

## DISCUSSION

Vaso-occlusive phenomenon and haemolysis ,the clinical hallmarks of SCD ,result in recurrent painful episodes and a variety of serious organ system complications. Preoperative evaluation is very important in SCD , we have done ABG to rule out hypoxia and acidosis .we ordered for exchange transfusion as our case had very high HbS levels .Preoperative intensive spirometry was done to prevent acute chest syndrome and atelectasis. Adequate hydration was maintained throughout. Utmost care was taken during induction and intubation to prevent hypoxia and hypotension. Intraoperatively maintained with Atracurium as bilirubin levels were very high, warm iv fluids were used to prevent hypothermia and adequate analgesia was provided with epidural infusion. Postoperatively control of infections, maintaining normal Hb and PCV is essential .

## CONCLUSION

Meticulous anesthetic management in the form of preoperative exchange transfusion, avoiding acidosis ,hypoxia ,hypothermia ,hypovolemia ,maintaining good intraoperative and post operative pain relief with epidural infusion, is the key to successful management of sickle cell disease.

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