CARDIAC SURGERY IN SICK CELL DISEASE – CASE REPORT

Euroanaesthesia
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15-year-old girl

Prior medical history

- ❖ Sick cell disease
- ❖ Rheumatic valvulopathy (Mitral, tricuspid and aortic severe insufficiency)

Pre-operative period

- ❖ Anti-congestive and sickle cell therapy was optimized
- ❖ **Laboratory values**
 - Hb **8.8** g/dL → 1U of red cells
 - HbS **33.5%** → erythrophoresis → HbS **30,3%**

Perioperative care

- ❖ Preoperative blood transfusion to achieve Hb values of 10g/dL
- ❖ Erythrophoresis
- ❖ Hydration
- ❖ Oxygenation
- ❖ Thermoregulation
- ❖ Acid-base balance
- ❖ Infections' control

Surgery

- ❖ **Aortic valve replacement with mechanical prosthesis**
- ❖ **Mitral valvuloplasty**
- ❖ **Tricuspid annuloplasty**
 - Balanced general anaesthesia
 - Hemodynamically stable
 - SpO₂ > 98%
 - pH > 7.3
 - Diuresis > 0.5mL/Kg/h
 - CPB circuit at 34°C
 - 3U of red cells

Post-operative period

- ❖ Intensive care unit (ICU)
- ❖ Hemodynamically stable
- ❖ Hb **10** g/dL
- ❖ HbS **18,4%**
- ❖ Sedo-Analgesia
- ❖ Avoiding acidosis, hypoxia and hypovolemia
- ❖ Hypocoagulation with warfarine, ursodeoxycholic acid, hydroxycobalamin and folic acid were initiated

First postoperative day

- ❖ **Left hemiparesis, left homonymous hemianopsia, right deviation of gaze – Total anterior circulation stroke syndrome**
- ❖ **EEG** - disorganized and slow electrical activity with greater functional commitment of the right hemisphere
- ❖ **CT scan – thrombus middle cerebral artery (M1)**

Discussion

- ❖ Between **25-30%** of patients with SCD undergoing surgery will have a **postoperative complication**¹
- ❖ **Surgical complications** are responsible for **7%** of the total deaths related to this disease¹
- ❖ One of the main postoperative complications are **cerebral stroke**¹
- ❖ Classical factors that predispose to falciformization are present in cardiac surgery
- ❖ Despite the careful peri-anaesthetic management to avoid these factors, unfortunately we couldn't prevent the occurrence of a serious complication

¹ Rev. bras. hematol. hemoter. 2007 Jul-Set; 29(3): 304-308