



CASE REPORT ON ANESTHETIC CONSIDERATION IN CEREBRAL PALSY PATIENT POSTED FOR OPEN NEPHRECTOMY

Anaesthesiology

Dr Jaya Dighe

Head Of Department, Dept Of Anesthesia, SBHMC Dhule

Dr Suvarna Sandanshiv*

Junior Resident, Dept Of Anesthesia, SBHGMC Dhule *Corresponding Author

Dr Rupali Patil

Lecturer, Dept Of Anesthesia, SBHGMC Dhule

ABSTRACT

Cerebral palsy (CP) presents unique anesthetic challenges due to its multisystem involvement, particularly in musculoskeletal, respiratory, and neurological systems. This case involves the anesthetic management of a patient with CP undergoing nephrectomy, a major abdominal surgery. The complexity of anesthesia in such patients arises from factors like spasticity, contractures, potential airway difficulties, and impaired respiratory function. Additionally, patients may have altered pharmacokinetics and dynamics of anesthetic agents due to musculoskeletal abnormalities and possible anticonvulsant therapy, which affects drug metabolism. Preoperative evaluation includes thorough assessment of airway anatomy, respiratory function, and seizure history, with particular focus on optimizing any existing respiratory conditions. Careful planning for intraoperative positioning is essential to avoid injury due to spasticity or contractures. Intraoperatively, the choice of anesthetic agents must take into account the altered sensitivity to neuromuscular blocking agents, and the potential need for prolonged postoperative ventilation. Postoperative care involves close monitoring for respiratory complications, pain management tailored to the patient's condition, and the prevention of complications related to immobility. This abstract highlights the need for multidisciplinary collaboration, individualized anesthetic planning, and meticulous perioperative care to minimize complications and ensure the best possible outcome for CP patients undergoing nephrectomy.

KEYWORDS

Cerebral Palsy, Airway Management, Neuromuscular Blocking Agents, Nephrectomy.

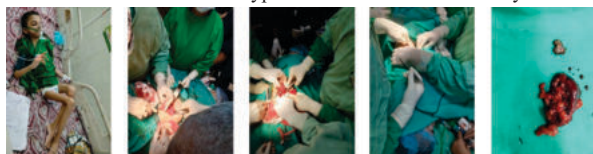
INTRODUCTION

An 8 yr old male child, a diagnosed case of cerebral palsy with spastic lower limbs and complains of difficulty in micturition was planned for open nephrectomy. On examination he was thin built and malnourished with weight of 15 kg. His respiratory and cardiovascular system were examined and were normal. Airway examination was suggestive of mouth opening 2 fingers and MPS could not be assessed as behavioral and communicative difficulties were present. Spine examination was normal.

His lab investigations were within normal limits. Renogram study/dimercaptosuccinic acid scan (DMSA scan) was suggestive of left kidney relative function 10% and effective renal plasma flow 45ml/min and that of right kidney relative function 90% and effective renal plasma flow 416ml/min.

s/o small left kidney with severe parenchymal dysfunction, drainage pattern cannot be commented upon due to dysfunction state. Normal functioning non-obstructed right kidney.

CT scan A+P s/o 25mm size hyperdense calculus in left kidney.



Preoperative:

- Anti aspiration prophylaxis: Inj. pantoprazole 20mg IV, Inj. dexamethasone 4mg IV
- Premedication: Inj. glycopyrrolate 0.06mg IV, Inj. ondansetron 1.2mg IV, Inj. midazolam 0.6mg IV Inj. pentazocine 6mg IV
- Preoxygenation with 100% O₂ for 5 minutes.
- Induction was done with Inj. propofol 10mg IV and Inj. ketamine 10mg IV
- Patient went under sedation and was able to ventilate. Inj. scholine 25mg IV was given.
- Patient was intubated with cuffed ET tube size 5.0 number by using laryngoscope and Macintosh blade number 2, air entry checked and adequate chest rise noted.
- ET tube bulb inflated and fixed at 16cm. Vaporizer of sevoflurane was switched on at MAC 2.
- Inj. atracurium 7.5mg IV used as an induction dose and maintained with 1.5mg dose.
- For postoperative analgesia Inj. paracetamol 225mg IV and Inj. tramadol 25mg IV used.

- After fixing ET tube, right lateral decubitus position was given to the patient. Lower leg is straight, upper leg flexed at hip and knee joint, arms are flexed in shoulder and elbow joint. All pressure points are padded including axilla with cotton.
- Locally at the site of incision 2% Inj. ligno+adre 3ml and 0.5% Inj. bupivacaine 3ml given. Patient was stable hemodynamically throughout the procedure. After 1 and half hour of surgery, extubation was done after patient was awake with reversal Inj. neostigmine 0.75mg IV and Inj. glycopyrrolate 0.15mg IV and thorough suctioning.

DISCUSSION

In patients of cerebral palsy complications like dehydration, electrolyte imbalances, muscle contractures, joint dislocation, GERD, seizures, respiratory tract infections are encountered commonly. By using warm fluids and blankets hypothermia can be prevented. As these patients are malnourished, vascular access and positioning on OT table is difficult. Proper cotton padding at pressure points is necessary to avoid nerve damage and pressure sores. There should be a comprehensive, multi-disciplinary approach that meticulously addresses preoperative, intraoperative, and postoperative challenges. Emphasis on personalized care, vigilant monitoring, and an adept understanding of CP-related complexities are crucial to optimizing outcomes and ensuring a safe perioperative journey.

REFERENCES

1. Tisdall MM, Taylor B, Gill S, et al. Anaesthesia and cerebral palsy. Br J Anaesth. 2013;111(5):654-659.
2. Kato T, Takao CM. Cerebral palsy and anesthesia. J Clin Anesth. 2014;26(6):469-475.
3. UpToDate. Anesthesia for the patient with cerebral palsy. Available from: <https://www.uptodate.com>
4. Brunetti V, Gunnam K, Zagami MA, Kimber C. Anaesthetic management of children with cerebral palsy: a scoping review. Anaesth Intensive Care. 2021;49(5):330-342.
5. UK Kidney Association The UK eCKD Guide. 2017. <https://ukkidney.org>
6. National Institute for Health and Care Excellence. NICE; London: 2021. Chronic kidney disease: assessment and management, NICE guideline NG 203.
7. Gama R.M., Clery A., Griffiths K., et al. Estimated glomerular filtration rate equations in people of self-reported black ethnicity in the United Kingdom: inappropriate adjustment for ethnicity may lead to reduced access to care. PLoS One. 2021;16