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CASE REPORT **OPEN ACCESS**

ANAESTHETIC IMPLICATIONS OF VIDEO LARYNGOSCOPY AND REGIONAL ANAESTHESIA IN A PATIENT OF CONGENITAL TORTICOLLIS : A CASE REPORT

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A B S T R A C T

Background: Congenital torticollis is a pathological condition involving an abnormal tilt and rotation of the head and neck, often due to dysfunction of the sternocleidomastoid muscle. While conservative treatment is typically effective in early stages, surgical intervention becomes necessary for refractory cases or when fibrosis develops. This report highlights the anaesthetic challenges and management strategies for a patient with congenital torticollis undergoing Ferkel's bipolar sternocleidomastoid muscle release.

Methods: A 15-year-old female patient with cervical scoliosis, atlanto-axial subluxation, and a Mallampati Grade III airway underwent a detailed preoperative evaluation. Anaesthesia was induced with fentanyl, glycopyrrolate, and propofol, followed by succinylcholine for muscle relaxation. Intubation was achieved using video laryngoscopy to ensure optimal visualization. Maintenance anaesthesia included oxygen, nitrous oxide, 1% sevoflurane, and vecuronium. Ultrasound-guided superficial cervical plexus block with 0.25% bupivacaine was administered for postoperative analgesia.

Results: The surgery, lasting two hours, was conducted with the patient in a supine position with careful head alignment. Despite airway challenges, successful intubation was achieved on the first attempt. Intraoperative and postoperative management ensured stable vital signs, adequate analgesia, and an uneventful recovery.

Conclusion: This case underscores the importance of individualized anaesthetic planning in patients with congenital torticollis. Combining general anaesthesia with regional techniques enhances intraoperative conditions and postoperative outcomes. Video laryngoscopy proved invaluable in overcoming airway challenges, while targeted regional anaesthesia reduced systemic analgesic requirements.

Keywords: Congenital torticollis, airway management, video laryngoscopy, regional anaesthesia, superficial cervical plexus block, anaesthetic challenges.

INTRODUCTION

Torticollis, derived from the Italian term torti colli meaning "twisted neck," refers to a pathological condition characterized by an abnormal tilt and rotation of the head and neck. This condition can present in various positions, including flexion, extension, or tilt to the right or left, and is categorized into horizontal, vertical, oblique, or torsion types. Torticollis may be benign, such as congenital torticollis, or indicative of more serious underlying issues, such as brain injury.

The most common form of torticollis in children is congenital torticollis, often arises from dysfunction in local neuromuscular mechanisms, particularly affecting the sternocleidomastoid muscle. This muscle, located in the anterior neck, attaches to the sternum, clavicle, occipital region, and mastoid process. It plays a key role in head rotation, inclination, and flexion. Surgical intervention is typically considered for congenital torticollis in children older than 12

months who do not respond to conservative treatments such as physical therapy or botulinum toxin injections, or when the sternocleidomastoid muscle has become significantly fibrotic. The surgical procedure involves dissecting and releasing the two heads of the sternocleidomastoid muscle. Postoperative care includes a soft neck collar and a structured physiotherapy program lasting 3-4 months to enhance recovery and muscle function.

CASE

A 15-year-old female patient presented to the Orthopaedics OPD with a chief complaint of neck deformity and pain on neck rotation. Following a pre-anaesthetic checkup, the patient was scheduled for Ferkel's bipolar sternocleidomastoid muscle release. On clinical examination, her pulse rate was 96/min, regular with adequate volume, and her blood pressure was 100/68 mm Hg. She was classified as Mallampati Grade III with a mouth opening of 2.5 cm. NCCT Cervical spine demonstrated cervical scoliosis with convexity towards left side and atlanto- axial joint subluxation, and her electrocardiogram (ECG) showed sinus rhythm with no abnormalities.

After placement of standard monitors, anaesthesia was induced with fentanyl 70 µg, glycopyrrolate 0.2 mg, and propofol 70 mg. After ensuring bag and mask ventilation with 100% oxygen, inj succinylcholine 50mg iv was given, followed by video laryngoscopy to facilitate intubation. Despite some difficulty, visualization of the glottis was achieved, and tracheal intubation was successfully completed on the first attempt with a 6.0 mm cuffed endotracheal tube fixed at 18 cm. Throughout the procedure, the patient's neck was maintained in a neutral position to avoid flexion and excessive extension.

Anaesthesia was maintained with oxygen, nitrous oxide, 1% sevoflurane and vecuronium was administered in divided doses as the muscle relaxant. Vital signs were continuously monitored. Before handing over the patient to orthopaedic surgeon, ultrasound guided superficial cervical plexus block with 10ml 0.25% bupivacaine was given.

The surgical procedure lasted 2 hours, with the patient positioned supine and the head rotated to the opposite side. At the end of the surgery, neuromuscular blockade was reversed with neostigmine and glycopyrrolate. Extubation was performed once the patient showed adequate airway reflexes and regular breathing. Postoperatively, the patient was given supplemental oxygen and monitored in the Post Anaesthesia Care Unit (PACU) for 2 hours. The recovery period was uneventful with stable vital signs and no complications.

DISCUSSION

This case illustrates several key aspects of anaesthetic management in patients with congenital torticollis.

1. Airway Management: The patient's Mallampati Grade III with mouth opening 2.5cm and atlanto-axial subluxation posed challenges for intubation. Video laryngoscopy facilitated visualization, leading to successful intubation on the first attempt. Proper positioning and neutral alignment of the neck were critical to avoid exacerbating the condition and to ensure successful intubation.
2. Induction and Maintenance: Induction with fentanyl, glycopyrrolate, and propofol, followed by succinylcholine for rapid muscle relaxation, allowed for smooth intubation. Maintenance with sevoflurane, nitrous oxide, and vecuronium ensured adequate anaesthetic depth and muscle relaxation.
3. Regional Anaesthesia: The addition of an ultrasound-guided superficial cervical plexus block with 0.25%

bupivacaine provided targeted analgesia, reducing the need for higher doses of systemic analgesics and potentially improving postoperative pain management.

4. Monitoring and Positioning: Continuous monitoring of vital signs, including heart rate, blood pressure, Spo2 and end-tidal CO2, was essential for ensuring patient stability. The supine position with the head rotated was managed carefully to prevent complications and optimize surgical access.

CONCLUSION

The successful management of this patient with congenital torticollis highlights the necessity for comprehensive preoperative assessment and individualized anaesthesia management, particularly in patients with cervical spine abnormalities. The integration of regional anaesthesia techniques, alongside general anaesthesia, can significantly improve patient outcomes and enhance recovery.

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