ORIGINAL RESEARCH PAPER
Volume-8 | Issue-12 | December - 2019 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A CASE REPORT ON ANESTHETIC MANAGEMENT FOR REPAIR OF CLEFT PALATE, WITH CONGENITAL AROTIC STENOSIS

Anaesthesia

A. Mani Meghana Sri Venkateswara Medical College
T. V. L. Tanuja* Sri Venkateswara Medical College *Corresponding Author
M. Suchitra Sri Venkateswara Medical College

ABSTRACT

Cleft lip/palate are the most common craniofacial anomalies in children, with an incidence of 1:800 live births. Cleft palate alone occurs in 1:2000 live births. Cardiac anomalies are one of the most common congenital disorders associated in cleft lip and palate patients.
We report a 19 year old female patient came for repair of cleft palate, with known case of Aortic stenosis since childhood and undergone aortic ballon volvotomy, AV repair, cuspal thinning with post op arotic gradient of 100 m/s. The authors report successful anesthetic management for repair of cleft palate in presence of aortic stenosis in a 19 year old female patient.
After keen preoperative assessment general features difficulty was faced during intubation otherwise the intra operative procerdure was uneventful. Post operative analgesia managed with intravenous paracetamol.

KEYWORDS

CHD – aortic stenosis – fixed cardiac output state, Preload should be maintained, Avoid bradycardia/tachycardia, Hypnosis using benzodiazepines, fentanyl. Cleft palate associated syndrome - Treacher collines, Hemi facial microsomia, Velocardio facial syndrome. Difficult intubation with increased age in cleft palate patients.

INTRODUCTION :

Cleft lip (CL) and cleft palate (CP) are one of the most common congenital anomalies found and the most common craniofacial anomaly seen by plastic surgeons. It occurs due to the failure of fusion or break in fusion of nasal and maxillary processes with the palatine shelves, which form during 8th week of the embryonic period. About 150 syndromes may be associated with cleft deformities. The most well-known are the Pierre Robin's, Treacher Collins and Goldenhar syndrome. Congenital heart disease (CHD) occurs in 5-10% of these patients[1]. Surgical repair of cleft lip is usually done at 1-3 months of age for cosmetic purpose and cleft palate at 6 months to 1 year of age to promote facial growth and the speech. The successful outcome following cleft repair depends on the age of the patient, associated morbidities, anaesthetic expertise and post-operative care[1]. Infants with facial deformities are usually associated with abnormal dentition/ hearing defect, recurrent ear/upper respiratory tract infection (URTI), pulmonary aspiration and poor nutrition.

Until recently criteria for cleft repair in infants was 10 pounds of weight, 10 weeks of age and haemoglobin of 10 g%[2]. Recent concepts of early repair in neonates are based on improvements in parent-infant bonding, feeding, growth and speech development[2].

Anaesthesia for cleft surgery in infant and children carries a higher risk with general anaesthesia and airway complications due to associated respiratory problems. Review of literature mentions higher incidence of perioperative respiratory complications when associated with the common cold symptoms in children for cleft repairs [3,4]. Morbidity during general anaesthesia is associated with the difficult airway, endotracheal (ET) tube compression/disconnection and post-operative airway obstruction [1,4].

Case presenation :

A 19 year old female patient named Prasanna hailing from Nellore, came to plastic surgery department Sri Venkateswara Government General Hospital, for repair of cleft palate. She is a known case of Aortic stenosis since childhood and undergone aortic balloon volvotomy, AV repair, cuspal thining with post operative arotic gradient of 100 m/s.

At the time of presentation there was no history of breathlessness, chest pain, palpitations, syncopal attacks, usage of other drugs, recurrent upper respiratory tract infections, regurgitation. She was having a family history of non – consanguineous marriage. On examination it was observed that the patient is conscious, oriented microcephaly present with no pallor icterus cyanosis clubbing and edema, 35kg weight, height 150 cm, BMI -15.5, Pulse Rate : 90\min, low volume, slow, sustained raise in character, Blood pressure : 90\70 mm of Hg. In cardio vascular system, S_1 S_2 present with systolic murmur 2nd right inter coastal space and in respiratory system the bilateral air entry was present with normal vesicular breath sounds.

The patients airway was having a small mouth opening with 2 finger breadth, thyromental distance with 2 finger breadth, Mallampatti grading couldn't be assessed due to cleft palate, Temporo Mandibular Joint mobile; Hypoplastic mandible, Neck spine normal, crowding of teeth present and no loose dentures.

Investigation shows that Hb was 11.0 gm %, Blood Group – O+ve as per the coagulation profile BT was 2'10", INR -1.2, CT - 3'52" there was no specific findings in ECG.

2d – Echo reported that the Aortic valve was Thickened, bicuspid ; gradient was 85/96 mm of hg, size of Left atrium was 22 mm, Left ventricle was mild concentric left ventricular hypertrophy, Post aortic balloon valvotomy, Bicuspid aortic valve, Severe Aortic stenosis, Normal Left Ventricle systolic function, ejection fraction was 79%.

Anesthetic management :

On night before surgery given tablet alprazolam 0.25 mg after shifting to OT patient is connected with standard monitoring of NIBP SPo_2 probe, arterial line in radial artery & defibrillator ready; premedicated with ondansetron 0.1 mg/kg, midazolam 1 mg/iv.

By keeping difficult intubation kit ready and emergency tracheostomy, available Induced with injection fentanyl 70 mcg intra venous (2mcgs/kg) and injection Thiopentone 4mg/kg slowly given. As Bag and mask ventilation can be done, muscle relaxant injection, vecuroniun – 0.1 mg/kg given. Intubated with 6 number size ET tube with experienced anesthesiologist with bougie and backward upward pressure of glottis at 2nd attempt fixed in the centre at 16 cm after confirmation Bilateral air entry; throat pack is placed.

Maintenance with (O_2,"N_2O) – (2:2), iv acetaminophen : 15 mg/kg/bw, Intermittent fentanyl -20µg, Injection vecuronium and advised surgeon not to use any adrenaline containing solutions in between surgery as it may cause tachycardia. Surgery went uneventful, for 2 and a ½ hr. Patient is stable throughout the surgery throat pack removed.

Patient was reversed with 2 mg injection neostigmine 0.07mg/kg body weight, adequate spontaneous response; extubation response is avoided with injection xylocard . Patient is extubated after attaining full concious state. Post operative pain management with i/v paracetamol and monitored for 48 hrs after surgery.

DISCUSSION

Heredity plays a significant role in cleft deformity besides parents' age, nutrition, radiation and certain drug therapies. 25% of cleft lips are bilateral and 85% of them have associated cleft palate. Tiret et al.

reported incidence of anaesthesia related complications within 24 h in 4.3/1000 infants and 0.5/1000 in children with 0.01% death[5]. Cohen et al. reported higher peri anaesthesia morbidity in paediatric patients (35%) compared to adults (17%)[6]. Majority of the anaesthetic morbidity in cleft repair is related to the airway such as difficult intubation, ET tube compression, disconnection or accidental extubation[1]. Assessment of the degree of difficulty during intubation is not always possible preoperatively.

Gunawardhana in his study of 800 cleft lip/palate repairs reported difficult intubation and need for external laryngeal pressure in 86% of cases with Cormack and Lehane Grade III and IV airway grades. The incidence of difficult laryngoscopy was 2.95% in unilateral, 45.7% in bilateral cleft lip and 34.6% in retrognathia with significant association of the lower age with difficult laryngoscopy [7].

Fillies et al. reported major complications such as laryngospasm, arrhythmias, excessive bleeding, hyper/hypothermia in 45.2% of lip repairs and 29.8% in palate repairs respectively[8]. McQueen et al. noted incidence of the anaesthetic complications in 31% of the overall reported complications in the data reviewed during 2005-2006. Difficult intubation, bronchospasm and airway obstruction accounted for majority (76%) of these reported studies[9]. Fillies et al. observed average blood loss of around 15 ml and 45 ml during cleft lip and palate closure[8]. Doyle and Hudson reported requirement of blood transfusion in 10% patients of cleft lip and 16% of palate repair in their series of 244 cleft surgeries[10]. They used post-operative opioids for pain-relief and noted respiratory depression in 3/97 patients and total respiratory arrest in one case.

We conclude that each patient of cleft palate requires meticulous preoperative evaluation and high level of intraoperative and postoperative continuous monitoring regardless of any surgical procedure. Surgical correction of cleft palate in such patients demands very high anesthetic and surgical skills as both share common airway. Present case report highlights the significance of aggressive perioperative management in cleft palate which can result in successful outcome.

Acknowledgement: First author : Mani meghna, Second author : Tanuja, Third author : Suchitra.

REFERENCES

1. Law RC, de Klerk C. Anesthesia for cleft lip and palate surgery. Updat Anesth. 2002;14:27–30.
2. Sandberg DJ, Magee WP, Jr, Denk MJ. Neonatal cleft lip and cleft palate repair. AORN J. 2002;75:490–8.
3. Desalu I, Adeyemo W, Akintimoye M, Adepoju A. Airway and respiratory complications in children undergoing cleft lip and palate repair. Ghana Med J. 2010;44:16–20.
4. Takemura H, Yasumoto K, Toi T, Hosoyamada A. Correlation of cleft type with incidence of perioperative respiratory complications in infants with cleft lip and palate. Paediatr Anaesth. 2002;12:585–8.
5. Tiret L, Nivoche Y, Hatton F, Desmonts JM, Vourc'h G. Complications related to anaesthesia in infants and children. A prospective survey of 40240 anaesthetics. Br J Anaesth. 1988;61:263–9.
6. Cohen MM, Cameron CB, Duncan PG. Pediatric anesthesia morbidity and mortality in the perioperative period. Anesth Analg. 1990;70:160–7.
7. Gunawardana RH. Difficult laryngoscopy in cleft lip and palate surgery. Br J Anaesth. 1996;76:757–9.
8. Fillies T, Homann C, Meyer U, Reich A, Joos U, Werkmeister R. Perioperative complications in infant cleft repair. Head Face Med. 2007;3:9.
9. McQueen KA, Magee W, Crabtree T, Romano C, Burkle FM., Jr Application of outcome measures in international humanitarian aid: Comparing indices through retrospective analysis of corrective surgical care cases. Prehosp Disaster Med. 2009;24:39–46.
10. Doyle E, Hudson I. Anesthesia for primary repair of cleft lip and cleft palate: A review of 244 procedures. Pediatr Anaesth. 1992;2:139–45.