ORIGINAL RESEARCH PAPER
Volume - 12 | Issue - 09 | September - 2023 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ANAESTHETIC MANAGEMENT OF ACROMEGALY: A CASE REPORT

Medical Science

Dr. Kirti Rishi
Dr. P .Raja Asst. Professor
Dr. V.A. Sabapathy HOD VMKV MCH, SALEM

KEYWORDS

INTRODUCTION:
Acromegaly is a chronic debilitating disease due to adenoma of the pituitary gland secreting excessive growth hormone. Anesthetic considerations for a patient undergoing pituitary surgery are always a challenge to the anesthesiologist. These patients often have multi system involvement including respiratory, neurological, neuromuscular and skeletal systems.

Anesthetic implication of this disorder is particularly significant in terms of changes in the upper airway and increased chances of pulmonary and cardiovascular complications. We report a case of Acromegaly posted for trans-sphenoidal endoscopic surgery.

Case Report:
Chief complaint: A 51 Y Male Wt. 65 kgs, Height: 170 cm, presented with worsening polyuria, blurring of vision and episodic headaches since 15 days.

Presenting Illness: Enlargement and puffiness of face, hands, and feet, broadening of nose, increase in jaw size and hoarseness of voice in the last 2 months with dyspnea on exertion.

Medical & Surgical history: Known case of HTN since last 3 yrs. and uncontrolled Type 2 DM since 2 yrs. No h/o any past surgeries.

Anesthesia Assessment: Patient had a large, thick, protruding tongue, puffiness of the face and swollen lips. MP-IV with enlarged uvula, upper lip bite test negative. Mouth opening>3 fingers, Thyro-mental distance>6cms. Spine: normal. ENT opinion: Thick epiglottis.

General Exam: BP: 200/110 mm hg, H.R. 96/min, R.R: 17/min. Chest: Bilateral Vesicular breath sounds. CVS: S1, S2 present, no murmur on auscultation.

Investigations:
- **Hb**: 9.8gm%, **BT**: 4.30**, CT**: 5.0**, FBS**: 203 mg/dl
- **Hormonal Assay**: GH 52ng/ml (normal<10 ng). Prolactin, LH, FSH, TSH, ACTH: within normal limits.
- **CXR**: WNL.
- **ECG:** Sinus rhythm, T wave inversion in leads I, aVl and V4.
- **ECHO**: Severe L. V. Hypertrophy.
- **CT Brain**: Homogenously enhancing sellar mass.
- **Meds**: Patient was on Tab. Voglibose 0.3mg TID, Tab. Metformin 500mg bid., Tab. Torsemide 10 mg 1/2OD, Tab. Olmesartan 40mg bid, Inj. H. Mixtard (30/70) 30-0-15, Inj. H. Actrapid s/c 5-4-4.

After adequate control of blood sugars and blood pressure, the case was taken up for endoscopic pituitary decompression through Trans sphenoidal approach under general anesthesia for the removal of pituitary adenoma.

Anaesthesia Management:
Patient was pre-medicated with inj. Midazolam. Xylometazoline nasal drops were applied 15 min. before induction. Two large bore IV (16 gauge) cannulas were inserted .Noninvasive and Invasive hemodynamic monitoring with an arterial line and a central venous pressure line were done.

After pre-oxygenation, induction was done with Propofol and Fentanyl. Inj. Sch. was given and patient was ventilated. Intubation was tried with Reinforced size 8 tube. However, intubation was successful with insertion of bougie and railroading of size 7 Reinforced tube. Air entry was confirmed and tube was fixed. Inj. Vecoronium 6.5mg IV was given. A throat pack was inserted. Anesthesia was maintained with Isoflurane, Oxygen and N_2O.Inj. Fentanyl, Inj. Vecoronium: given intermittently.

Patient was positioned supine with head elevated to position the operative field above the level of the heart. During the surgery, SBP was maintained: 120-130mm hg. HR maintained at 70 to 88/min. After surgery, patient was extubated, and observed for 48 hrs.

DISCUSSION:
The Goals of Anesthesia must be targeted towards attaining:
Hemodynamic stability, adequate oxygenation, normal intracranial pressure and blood sugar.

Airway Management:
Difficulty in airway management can be anticipated due to hypertrophy of soft tissues of the nose, tongue, turbinate and epiglottis due to high growth hormone levels. The incidence of difficult intubation in Acromegaly patients is four to five times higher than rate of 2.5% in normal population. Prognathism results in difficulty with mask ventilation. Thyroid goiter may be present in Acromegaly patients causing tracheal compression Hoarseness of voice, which may caution Stenosis of the larynx. **SOUTHWICK AND GATZ defined four grades of airway involvement:**
1. No involvement
2. Nasal and pharyngeal involvement
3. Glottic Stenosis
4. Combination of 2&3

In our case, the patient had **grade 2** involvement of the airway. Hence no serious difficulty in airway management was anticipated. Elective tracheotomy or awake fiber optic intubation is recommended for grade 3 and 4 patients. Cricoid pressure and tube exchanger may be helpful in difficult intubation.

Other problems which may be encountered in the Acromegaly patient are hypertension, an idiopathic cardiomyopathy and D.M. Our patient had hypertension and diabetes mellitus, adequately controlled with medications .High incidence of obstructive sleep apnea in Acromegaly can increase the incidence of postoperative respiratory obstruction. Our patient did not have a history suggestive obstructive sleep apnea.

CONCLUSION:
Pituitary surgery in Acromegaly patients poses several challenges to the anesthesiologist, including airway management, Neuro-endocrine abnormalities, existing co morbidities, and transporting and positioning the huge patients.

A thorough pre-operative assessment of the patient, airway and neuro-endocrinological status of the patient should be checked to make a peri-operative plan to manage these patients with a coordinated approach from intensivist, neurosurgeon and endocrinologist for the smooth successful management of these cases.

REFERENCES:
1. Chan VWS, Tindal S. Anaesthesia for trans-sphenoidal surgery in a patient with extreme gigantism. Br J Anaesth 1988; 60:464-68.
2. Nemergut EC, Dumont AC, Barry UT, Laws ER. Peri-operative management of patients undergoing trans-sphenoidal pituitary surgery. Anesth Analg 2005; 101:1170-81
3. Campbell PG, Kenning E, Andrews DW, Yadla S, Rosen M, Evans JJ. Outcomes after a purely endoscopic trans-sphenoidal resection of growth

4. Malhotra SK, Sharma K, Saini V. Pituitary surgery and anesthetic management: An update. World J Endoc Surg 2013; 5:1-5.
5. Seidman PA, Kofke WA, Policare R, Young M. Anesthetic complications of acromegaly. Br J Anaesth 2000; 84: 179-82.
6. Smith M, Hirsch NP. Pituitary disease and anaesthesia. Br J Anaesth 2000; 85:3-14.
7. Ali Z, Bithal PK, Prabhakar H, Rath GP, Dash HH. An assessment of the predictors of difficult intubation in patients with acromegaly. J Clin Neurosci 2009; 16:1043-45.