

Anesthetic Management of Nasal Glomus Angioma - A Rare Vascular Tumour

Deepak Sharma

Glomus tumour arise from paraganglionic cells derived from neural crest and migrate in proximity with autonomic ganglion cells. The largest collection of these cells come to rest in the adrenal medulla where they are called Pheochromocytoma (stain golden brown when fixed with chromium salts). The remainder of paraganglion system scatter into masses of neural crest tissue distributed symmetrically in para - axial region of trunk.

Preoperative Case Summary : A, 45 years old male weighing 76 kgs with ASA grade II presented with nasal obstruction since one year and three episodes of spontaneous epistaxis. Local examination revealed pulsating mass in left nasal cavity with extension into sphenoid sinus. An open biopsy was performed in controlled hospital setting which proved to be glomus angioma - a rare vascular tumour. The patient was planned for radical excision via left lateral rhinotomy approach under general anesthesia. On pre-anesthetic checkup, patient was placed on combination of enalapril 5mg & hydrochlorothiazide 50mg twice daily for control of moderate hypertension before taking up for surgery. History did not reveal any other significant medical ailment.

On examination, patient was found to be average built with no pallor, cyanosis or pedal edema. Air entry to both lungs was equal and heart sounds were normal. Preoperative investigations showed hemoglobin 12.7gm/dl, hematocrit 41.2% platelets $105 \times 10^3/\text{ml}$, bleeding time 2 mins. 43 Sec., clotting time 8 Mins. 17 Sec., prothrombin index 75%, APTT 30 sec. RFT were within normal limit. Blood sugar was 88 mg/dl. Ultrasonography of abdomen was done to rule out adrenal mass (pheochromocytoma). CT (head) revealed a mass occupying left nasal cavity (Fig. 1) intruding into ethmoid air cell left maxillary sinus and sphenoid sinus (Fig. 2). Right nasal cavity, both orbits, cranial cavity and right maxillary sinus were spared.

Three units of cross matched whole blood, one unit of fresh frozen plasma and ATD (adult therapeutic dose) pack of platelet concentrate was arranged.

An informed written consent was obtained from patient for operation. In preanesthesia room, two widebore cannula (16G) were established one in each arm. Patient received iv pantaprazole 40mg, and im glycopyrolate 0.2mg 30mins before induction time.

Intraoperative monitoring included continuous ECG (leadII), blood pressure, core temperature, SpO₂, central venous pressure and urine output.

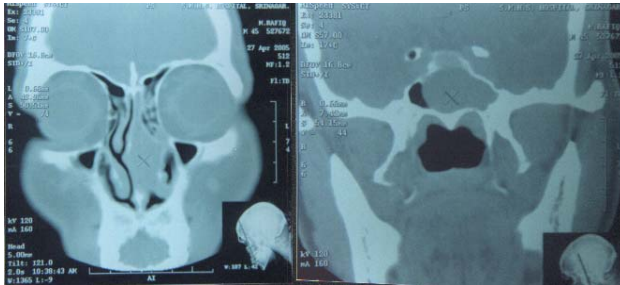
At induction, his vital parameters depicted - heart rate 70/min, blood pressure 125/70 mmHg, SpO₂ 97% ABG-PH 7.425, PaCO₂ 4.4 Kpa, PaO₂ 10.5 Kpa, HCO₃-22 mmol/L, BE - 2.6 mmol/L

Inj ceftriaxone 1 gm iv was administered. An infusion of esmolol (100mg/kg/min) was started to suppress intubation response.

After preoxygenation, patient was induced with propofol 150mg and intubation was facilitated with succinylcholine 100mg with flexometalic oral cuffed ET 8.5 and secured firmly with tape. A throat pack was inserted around ET to absorb blood. Maintenance anesthesia included N₂O 60%, O₂ 40%, isoflurane 1%, vecuronium (7mg initial dose followed by infusion at 2mg/kg/min) and Tramadol (100mg). To reduce venous oozing, a 20° head up tilt was applied. Local vasoconstrictors were barred. During tumour manipulation, there was an upsurge of blood pressure which was controlled by infusing glyceryl trinitrate (70-350 mg/min) and increasing the infusion of esmolol to 150mg/kg/min. Moderately controlled hypotensive condition were obtained. Lowest recorded blood pressure was 101/60mmHg by controlling infusion rate. Total blood loss during 3

hours operating time was 2100 ml (measured from calibrated suction bottle by applying a continuous soft suction catheter at the operating field and avoiding any spillage). Intraoperative replacement was given by infusing 3000ml which included 2 units of whole blood, 1 unit fresh frozen plasma, 1 ATD platelet concentrate and ringer lactate.

Anterior nasal & nasopharyngeal packing was done. At end of the surgery, direct light reflex for optic nerve was normal. Pharynx was thoroughly suctioned and observed for 5 minutes for any bleeding. Throat pack was removed & patient was extubated in left lateral head down position after reversing neuromuscular blockade with premixed neostigmine 2.5 mg and glycopyrolate 0.4 mg. A soft suction catheter was placed through Guedels airway to keep airway clean. Patient was transferred to postoperative high dependency unit after gaining airway reflexes & was nursed in left lateral position. Postoperative period was uneventful. Vitals were maintained.

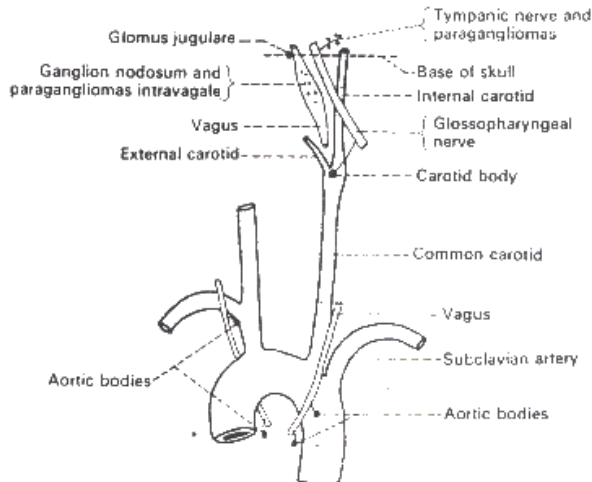


Glomus tumour a nonchromaffin paraganglion is a benign vascular tumour but behaves malignant locally (1). It is composed of tortuous arteriole which communicate directly with venule the network being surrounded by small nerves (2,3). It arises most commonly from dome of jugular bulb (glomus juglare) or tympanic branch of IX cranial nerve (Jacobson's nerve) on promontory (4). Other sites include carotid body, aortopulmonary and rarely nasal cavity. Rarely patients with glomus tumour present with sign & symptoms of pheochromocytoma (functioning glomus tumour) (5).

Presence of an angioma in the nasal cavity is a rare unique incidental occurrence. It may occur either interosseously in the nasal bone or more frequently in the mucosa of nose and paranasal sinus. Often it is associated with Osler Weber Rendu disease or Von Hippel Lindau disease. Because of the possibility of these tumour extending into the cranial fossa, their timely detection and complete resection is deemed essential.

Perioperative anesthetic management of glomus tumour in head and neck region present challenge for maintaining clear airway but also adequately controlling life threatening hemorrhage intraoperatively (6). Former can be achieved by inserting throat pack (7), carefully suctioning blood & debris from pharynx before extubation particularly from behind the soft palate (Coroner's clot), observing for any fresh bleed from nasopharynx, extubating in left lateral slight head down position. Hemostasis can be maintained by adequate depth of anesthesia at induction, suppressing intubation response, head up tilt, moderate controlled intraoperative hypotention (8), extubating smooth with minimum coughing and straining and adequate analgesia. Intraoperative excessive reduction in blood pressure should be avoided as it could decrease cerebral perfusion in head up position in hypertensive patients who have impaired cerebral autoregulation. Isoflurane volatile agent has advantage in maintaining anesthesia as it does not impair cerebral autoregulation.

In conclusion, meticulous perioperative anesthetic management of vascular tumour decrease morbidity and mortality associated with these tumours and improves surgical outcome.



References

1. Gulya AJ. The glomus tumour & its biology. *Laryngoscope* 1993 ; 103 : 7-15.
2. Russel RCG, Williams NS, Bulstrode CJK. Vascular tumor Bailey and Love's short practice of surgery. 23rd edition 2000. pp. 153.
3. Townsend Courtney M. Vascular tumor Sabiston's text book of surgery 16th edition 2001. vol. 2 pp 1523.
4. Lattes R. Nasal Glomus Angioma. *Cancer* 1950 ; .3 : 667.
5. Decker GAG, Plessis DJdu. Lee's McGregors synopsis of surgical anatomy, 12th edition 1986. pp 131.
6. Jensen NF. Glomus tumour of head and neck. Anesthetic consideration. *Anesth Analg* 1994 ; 78 :112.
7. Vickery IM & Burton GW. Throat pack for surgery. *Anesthesiology* 1977 ; 32 : 565 -72.
8. Enderby GEH. observation on the practice of deliberate hypotension. *Br J Anaesth* 1975 , 47 : 743-44.

From the Departments of Anesthesiology & Critical Care, Govt. Medical College Srinagar (J&K) India.

Correspondence: Dr. Deepak Sharma (MD), Senior Resident, Deptt. of Anesthesiology & Critical Care, Govt. Medical College Srinagar.