Undiagnosed bladder pheochromocytoma: An anesthetic challenge

Sir,

Pheochromocytoma is tumor of chromaffin cells derived from embryonic neural crest cells[1] usually in adrenal medulla. Approximately, 10% of these tumors occur at extra adrenal sites and are known as paraganglioma.

Paraganglioma of urinary bladder are rare, 0.05% of all bladder neoplasms.[2] These tumors in bladder cause a characteristic symptom complex most commonly related to micturition due to catecholamine release like paroxysmal hypertension, headache, sweating, palpitations and hematuria.[3] We present a case of bladder paraganglioma without typical symptoms.

A 29-year-old female 60 kg was posted for transurethral bladder tumor resection (TURBT). She presented with painless hematuria and burning micturition since 3 months. On examination, vitals and all routine investigations were normal except urine (routine) which showed red blood cells. Ultrasonography abdomen showed a polypoidal solid lesion arising from right lateral wall of bladder. Cystoscopy revealed a 3-5 cm solid rounded vascular mass arising from bladder base and right lateral wall with stalk [Figure 1].

General anesthesia was preferred to avoid obturator spasm occurring under spinal anesthesia. After informed consent, monitors were attached. Heart rate - 90/min, non-invasive blood pressure - 130/80 mmHg, SpO₂ 100%. Electrocardiogram (ECG) was normal. Intravenous (IV) cannula no. 20 inserted and ringer lactate started. Premedication consisted of injection ondansetron 4 mg, glycopyrolate 0.2 mg, fentanyl 60 µg and midazolam 1 mg. Anesthesia was induced with injection. Thiopentone sodium 200 mg slowly followed by injection succinylcholine 75 mg IV to facilitate endotracheal intubation by 7.5 mm cuffed endotracheal tube.
Maintenance with $O_2$: $N_2$ ratio of 50:50 and isoflurane 1% and vecuronium on closed circuit [Figure 2].

As tumor biopsy was being taken cystoscopically pulse rate rose to 160/min and blood pressure shot 220/130 mmHg, so anesthesia was deepened with injection fentanyl 50 µg IV and isoflurane increased up to 2%, injection xylocard 40 mg, injection metoprolol 3 mg IV slowly, injection nitroglycerine (25 mg in 50 ml) started at rate 0.5 ml/h [Table 1]. The procedure was abandoned. At that moment $SpO_2$ decreased to 90%, with tightness in reservoir bag. On auscultation air entry reduced, fine crepitations++, pink frothy secretions were present, so endotracheal suction carried out. Patient was ventilated with $FiO_2$ 100% and positive end-expiratory pressure (PEEP). Injection frusemide IV (120 mg), injection hydrocortisone 200 mg, injection dexamethasone 8 mg was given. Air entry improved and pulmonary edema subsided in 30 min. Patient was shifted on ventilator with $FiO_2$ of 60% on pressure control mode with PEEP to intensive care unit and extubated next day.

Due to this episode high degree of suspicion of pheochromocytoma was kept in mind. Patient was asked about history of fainting attacks during micturition, headache, sweating, visual disturbances, which were absent. Computed tomography scan abdomen/pelvis, ECG 2D echo were normal. Biochemical tests - Metanephrine, adrenaline, urinary vanillylmandelic acid levels were normal. Metaiodobenzyl guanidine (MIBG) showed an abnormal uptake in bladder. Fundus-grade II hypertensive retinopathy. Histopathology of tumor reported paraganglioma of bladder [Figure 3].

After 3 months partial cystectomy was done under general anesthesia. Intra-operative arterial line and central venous pressure line were cannulated to measure beat to beat variations of pulse and blood pressure. Vasodilators (injection nitroglycerin) was started to control surge of blood pressure and stopped after tumor excision. Patient was extubated uneventfully.

Pheochromocytoma is a rare catecholamine producing tumor occurring in approximately 0.002% of general population. 0.1% of hypertensive patient have pheochromocytoma which secrete epinephrine, norepinephrine and dopamine. Handling such tumors can precipitate “vascular crisis,” so intra-operative hypertension, tachycardia, sweating in absence of any obvious cause should alert possibility of missed neural crest tumor. During TURBT, general anesthesia was given to avoid obturator spasm. Obturator spasm can be avoided under spinal anesthesia by supplementing obturator nerve block. Pre-operative alpha blockers and volume expansion decreases perioperative mortality and morbidity in symptomatic patients. MIBG scanning is specific investigation for diagnosis of paraganglioma. It is an individual and institutional practice regarding choice of alpha adrenergic blockers for pre-operative control of pheochromocytoma. Recently, according to the studies in asymptomatic patient use of alpha blockers before surgery is no longer required, due to advances in anesthetic monitoring and short acting drugs.

Undiagnosed case of pheochromocytoma posted for incidental surgery may cause hypertensive crisis and catastrophic events while diagnosed case can be managed successfully by pre-operative optimization, invasive monitoring and cascade of drugs.

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Sir,

Difficult airway is a commonly encountered problem in the anesthesia practice. There are practice guidelines of difficult airway,[1,2] which have given a lot of stress on can't ventilate and can't intubate situation but do not adequately address rescue from a situation wherein after a CVCI one faces difficulty in securing an emergency surgical airway. Supraglottic airways, surgical or needle cricothyrotomy, high frequency jet ventilation, cardiopulmonary bypass[3] can be used as rescue in such scenario.

A 50-year-old male, known case of carcinoma esophagus, post-esophagectomy done 2 years ago, presented with complaints of dysphagia and orthopnea since 2 months. Computed tomography scan showed mass lesion involving cervical esophagus probably at anastomotic site with invasion in trachea causing compression and narrowing of infra-cricoid trachea lumen suggestive of probable recurrence of tumor at anastomotic site[Figures 1 and 2].

Patient had stridor and respiratory distress. Tracheal intubation was attempted twice without any success. Decision for bedside surgical tracheostomy under local anesthesia, avoiding intravenous sedation was taken in view of persisting stridor and impending airway obstruction. Difficult airway cart including fiber-optic bronchoscope was kept ready. However, patient was not able to tolerate any attempt of making him supine.

We then planned to shift patient to operation theater and do the procedure under inhalational anesthesia maintaining spontaneous breathing. Oxygen, nitrous oxide, and sevoflurane were used to maintain required depth with spontaneous and assisted ventilation. After proper positioning and local anesthesia infiltration, an otorhinolaryngologist started tracheostomy procedure, but was not able to appreciate the tracheal rings. There was hard structure extending from thyroid to suprasternal notch with no discrimination of anatomical landmarks, probably trachea infiltration by malignant cells. The exploration of tissue was very difficult. Meanwhile, mask ventilation with spontaneous ventilation was becoming increasingly difficult.

Then, direct laryngoscopy was carried out, which revealed a cleft instead of a glottic opening, through which we couldn't pass the endotracheal tube. We tried inserting different sizes of endotracheal tube (ETT); the smallest being 4 mm internal diameter (ID) uncuffed ETT with stylet.

Taking a hint from the way we do percutaneous...