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Original Research Paper

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ANAESTHETIC MANAGEMENT OF A CASE OF ACUTE INTESTINAL OBSTRUCTION WITH INCIDENTAL PHEOCHROMOCYTOMA.

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ABSTRACT Pheochromocytomas are rare neuroendocrine tumours arising from chromaffin cells of the adrenal medulla, with an incidence of 0.1–0.6% in hypertensive patients. Their hallmark feature is excessive catecholamine secretion, leading to labile hypertension and arrhythmias. Due to an incidental finding and inadequate optimisation of pheochromocytoma, anaesthetic challenges were high due to its cardiovascular implications. When complicated with acute surgical emergencies, anaesthetic management becomes even more challenging. We present a case of a 61-year-old female with intestinal obstruction, who was diagnosed with pheochromocytoma when she was undergoing investigations. She underwent laparoscopic adrenalectomy prior to emergency laparotomy for exploration of intestinal obstruction. The case highlights the importance of meticulous preoperative preparation, intraoperative vigilance, and postoperative critical care in managing such high-risk patients.

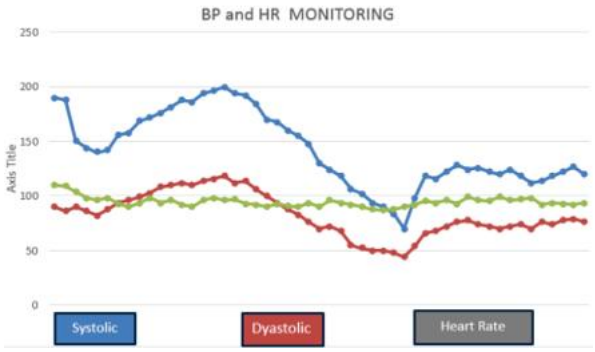
KEYWORDS : Pheochromocytoma, Intestinal Obstruction, Catecholamine

CASE REPORT

A 61-year-old female (58 kg) came with generalised weakness, recurrent episodes of headache, palpitation, sweating, abdominal pain, nausea and vomiting for 4 days. She was on Telmisartan 40 mg OD for hypertension, but because of poor control, it was changed to a BD dose. On admission, her BP was 200/110 mmHg, so T. METOPROLOL 50 MG OD was added. She gave a history of pulmonary tuberculosis at the age of 30 years and the treatment taken.

General examination revealed the patient was afebrile, with a pulse rate of 120/min, blood pressure of 210/110 mmHg, and Spo2 of 98% on room air. On systemic examination, the patient was conscious and oriented. Airway assessment showed Mallampati Grade 3 with adequate mouth opening. Cardiovascular system S1S2 normal with no murmurs. Bilateral equal air entry in the respiratory system with no additional sounds. The abdomen was distended with mild diffuse tenderness and rigidity. All routine investigations were normal except Hb of 9.6 mg/dl, and 2D ECHO showed 55% EF with mild LVH and diastolic dysfunction. The CT abdomen of the patient showed features of small bowel obstruction [dilation of jejunal and ileal loops up to the terminal ileum and a nondilated large bowel loop with an air fluid level] with an incidental finding of a circumscribed ovoid to round soft tissue lesion centred on the adrenal gland, for which the patient was further evaluated. Due to suspicion of pheochromocytoma, plasma metanephrine was sent, and the patient was immediately started on alpha blockade Tab PRAZOSIN 5MG + Tab CILACAR 10MG. Plasma METANEPHRINE was markedly elevated (1012.33 microgram/24hr) and consistent with pheochromocytoma. 1 unit of PRBC was transfused to increase Hb.

Emergency Laparoscopic adrenalectomy followed by exploratory laparotomy, SOS resection, anastomosis, and stoma for suspected intestinal obstruction was planned under general anaesthesia. In the operating theatre, routine standard monitors, a noninvasive BP monitor, an O2 saturation probe, ECG leads, and temperature probes were attached. Blood pressure was 190/90 mmHg, and pulse rate was 110/min, for which a bolus dose of INJ was administered. Labetalol 20mg I/V was given, and the patient was started on Inj. Dexmeditomidine infusion [200/50 that is 4mcg /ml] at 360mcg/HR for 10 mins, then tapered to maintenance according to 0.2-0.7mcg/kg/HR to reduce intubation response. Preoxygenated with 100 % O2 and Premedicated with IV Midazolam 1.8mg and fentanyl 120 mcg. Induced with inj. Propofol 100 mg IV given as per response, Mask ventilation checked and inj. Vecuronium 6mg I/V was administered as the intubation dose, and after 3 minutes of ventilation, the patient was intubated with a 6.5-mm cuffed ETT. Soon after intubation, the patient was started on Vecuronium infusion [40/50] started at 2 ml/HR (1.6 mg/HR). Under all aseptic precautions, a USG-guided 5.5 FRENCH Triple lumen canula was inserted in the right internal jugular vein, and left radial artery cannulation was done with a 3 FRENCH LEDAR CATH and a second peripheral line was secured with an 18 G IV cannula in the left antecubital. Monitoring of invasive blood pressure, central venous pressure, urine output and blood loss was done. Maintenance of anaesthesia was performed with sevoflurane 0.2-2%, oxygen-air mixture, VCV mode ventilation [370ml TV/12 per min frequency/60% FiO2/4 cmH2O PEEP]. Hemodynamic fluctuations in BP were noted during tumour handling.



BP started to rise [196/106 MMHG] during handling of the tumour, for which initially INJ. ESMOLOL 2mg IV bolus given. As BP was still high [200/121 mmHg] INJ. ESMOLOL [50/50] at 35 ml/HR and INJ. NTG [25/50] at 2ml/HR was started. Post Renal vein ligation, BP started to fall [SBP/DBP-100-50/40-30] for which ESMOLOL and NTG infusions were tapered and stopped. INJ. NORADRENALINE [4/50] at 2 ml/HR was started. Post adrenalectomy, an emergency exploratory laparotomy was done, in which no sign of intestinal obstruction was found.

Blood loss was 380 ml, transfused with 1unit PRBC and crystalloids, with total urine output of 40-50ML/HR. BP was maintained [SBP/DBP-120-110/70-60 MMHG]. Noradrenaline infusion was tapered and stopped.

The patient was intubated at 4.30 pm and shifted to the ICU for elective ventilation. Patient received fluid optimisation, potassium correction and continued hemodynamic monitoring. Weaning was initiated at 8 pm on the same day, and the patient was extubated at 10 pm.

DISCUSSION

Pheochromocytoma is a catecholamine-secreting tumor that classically presents with episodic headache, palpitation, diaphoresis, and sustained or paroxysmal hypertension. However, coexisting acute abdomen requiring surgical intervention is rare and presents significant perioperative challenges. In the present case, the patient presented with catecholamine surge symptoms along with features of acute intestinal obstruction, for which alpha-blockade and beta blockade for blood pressure control were required, and urgent surgical management was required before the ideal physiological optimisation could be achieved. The diagnosis was supported by characteristic symptoms, an adrenal mass on imaging and raised plasma METANEPHRINES.

Intraoperatively, the anaesthetic management focused on suppressing the sympathetic response, maintaining adequate anaesthetic depth, and responding promptly to rapid hemodynamic fluctuations. Wide blood pressure swings during tumour manipulation were well recognised and appropriately managed with titrated boluses and infusions of short-acting antihypertensives such as esmolol and nitroglycerin. The post-ligation hypotension was expected and managed with vasopressor therapy, namely norepinephrine infusion, along with RL, plasma-Lyte and blood for adequate volume expansion. The anaesthetic strategy was further supported by invasive monitoring, balanced anaesthesia and analgesia, controlled ventilation, and transfusion support, all of which helped prevent major complications during laparoscopic tumour resection and exploratory laparotomy.

CONCLUSION

Pheochromocytoma undergoing emergency adrenalectomy poses a unique anaesthetic challenge, as adequate preoperative catecholamine blockade and optimisation may be limited by emergent surgical indications. This case highlights the importance of early recognition of pheochromocytoma in patients with suggestive symptoms and refractory hypertension, even when presenting with unrelated abdominal pathology. Invasive hemodynamic monitoring, readiness with appropriate medication, and meticulous intraoperative titration are essential for successful management. Multidisciplinary coordination between anaesthesia, surgery, and critical care greatly contributes to improved perioperative outcomes. The successful perioperative course in this patient reinforces that with vigilant monitoring and readiness with emergency drugs, aggressive yet controlled management of hemodynamics, and emergency adrenalectomy for pheochromocytoma can be safely undertaken.

REFERENCES

1. Rawa Bapir, Shaho F. Ahmed, Soran Mohammed Gharib, Deedar Qader, Fahmi H. Kalama, Elenko Popov, Noor Buchholz, Abduwahid M. Salih, Acute intestinal pseudo-obstruction by pheochromocytoma: A case report with review of literature, International Journal of Surgery Case Reports, Volume 94,
2. Mamilla, D.; Araque, K.A.; Brofferio, A.; Gonzales, M.K.; Sullivan, J.N.; Nilubol, N.; Pacak, K. Postoperative Management in Patients with Pheochromocytoma and Paraganglioma. Cancers 2019, 11, 936. https://doi.org/10.3390/cancers11070936
3. Karel Pacak, Preoperative Management of the Pheochromocytoma Patient, The Journal of Clinical Endocrinology & Metabolism, Volume 92, Issue 11, 1 November 2007, Pages 4069–4079, https://doi.org/10.1210/jc.2007-1720
4. Sutton MG, Sheps SG, Lie JT. Prevalence of clinically unsuspected pheochromocytoma. Review of a 50-year autopsy series. Mayo Clin Proc. 1981 Jun;56(6):354-60. PMID: 6453259.
5. Tauzin-Fin P, Sesay M, Gosse P, Ballanger P. Effects of perioperative alpha1 block on haemodynamic control during laparoscopic surgery for phaeochromocytoma. Br J Anaesth. 2004 Apr;92(4):512-7. Doi: 10.1093/bja/aeh083. Epub 2004 Feb 6. PMID: 14766711.
6. Kinney MA, Narr BJ, Warner MA. Perioperative management of pheochromocytoma. J Cardiothorac Vasc Anesth. 2002 Jun;16(3):359-69. Doi: 10.1053/jcan.2002.124150. PMID: 12073213.
7. Augoustides JG, Abrams M, Berkowitz D, Fraker D. Vasopressin for hemodynamic rescue in catecholamine-resistant vasoplegic shock after resection of massive pheochromocytoma. Anesthesiology. 2004 Oct;101(4):1022-4. Doi: 10.1097/00000542-200410000-00031. PMID: 15448539.
8. Prys-Roberts C. Phaeochromocytoma—recent progress in its management. Br J Anaesth. 2000 Jul;85(1):44-57. Doi: 10.1093/bja/85.1.44. Erratum in: Br J Anaesthsia 2001 Apr;86(4):605. PMID: 10927994.