ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 8, Issue, 09, pp.39033-39034, September, 2016

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

ANAESTHETIC MANAGEMENT OF A CASE OF ADRENAL ADENOMA WITH COPD

***Dr. Amit Sharma, Dr. Sameer Agarwal, Dr. Chetan Suwalka and Dr. Chirag Patel**

D 209, New PG Hostel, Civil Hospital, B.J Medical College, Ahmedabad, Gujarat

ARTICLE INFO

Article History:
Received 20th June, 2016
Received in revised form
19th July, 2016
Accepted 28th August, 2016
Published online 30th September, 2016

Key words:

General anesthesia, Adrenal gland, Preoperative evaluation.

ABSTRACT

Adrenal gland surgery needs a multidisciplinary team including endocrinologist, radiologist, anesthesiologist and surgeon. The indications for adrenal gland surgery include hormonal secreting and non-hormonal secreting tumors. Adrenal hormonal secreting tumors present to the anesthesiologist unique challenges requiring good preoperative evaluation, perioperative hemodynamic control, corrections of all electrolytes and metabolic abnormalities, a detailed and careful anesthetic strategy, overall knowledge about the specific diseases, control and maintaining of postoperative adrenal function, and finally a good collaboration with other involved colleagues. This review will focus on the endocrine issues, as well as on the above-mentioned aspects of anesthetic management during hormone secreting adrenal gland tumor resection.

Citation: Dr. Amit Sharma, Dr. Sameer Agarwal, Dr. Chetan Suwalka and Dr. Chirag Patel, 2016. "Anaesthetic management of a case of adrenal adenoma with copd", *International Journal of Current Research*, 8, (09), 39033-39034.

INTRODUCTION

The adrenal cortex produces three types of hormones: glucocorticoids (cortisol), mineralocorticoids (aldosterone and 11-deoxycorticosterone), and androgens. Cushing's syndrome caused either by the overproduction of cortisol by the adrenal cortex or exogenous glucocorticoid therapy, results in a syndrome characterized by truncal obesity, hypertension, hyperglycemia, increased intravascular fluid volume, hypokalemia, abdominal striae, osteoporosis, and muscle weakness. Aldosterone is a major regulator of extracellular volume and potassium homeostasis. Hypersecretion (conn's syndrome) of the major adrenal mineralocorticoid aldosterone increases the renal tubular exchange of sodium for potassium and hydrogen ions, leading to hypertension, hypokalemic alkalosis, skeletal muscle weakness, and fatigue. Adrenal medulla produces epinephrine and norepinephrine. Pheochromocytoma is a neuroendocrine tumor arising from chromaffin cells in the adrenal medulla causing less than 0.1% of all cases of hypertension. Usually, tumors are benign but in 10% of the cases they may be malignant. These tumors may secrete the catecholamine (dopamine, norepinephrine, and epinephrine). Indications for adrenalectomy include primary or secondary (metastasis) tumors of adrenal glands and of coursehormonal secretion diseases like cushing (glucocorticoid excess), conn's (mineralocorticoid excess), and pheochromocytoma (catecholamine excess). This review is focused on anesthetic management of these diseases.

****Corresponding author: Dr. Amit Sharma,***
D 209, New PG Hostel, Civil Hospital, B.J Medical College, Ahmedabad, Gujarat.

Case Description

A 60 year old female 50 kilogram was scheduled for left adrenal adrenalectomy for recently diagnosed case of left adrenal adenoma with history of breathlessness on exertion and heart palpitation for 10 days and 2 month, respectively. Her comorbidities include hypertension from last 1 year, on regular medication tablet enalapril 5 mg twice a day. She is also suffering from chronic obstructive pulmonary disease from last 3 years was taking tablet deriphylline 100 mg twice a day. Preoperative pulmonary function test shows early restrictive stage copd as fev1/fvc>=70 % and fev1<80%, 2d echo reveals lvef 55%, rvsp 28 mmhg, normal lv size & fair lv function with reduced lv compliance, cect abdomen with pelvis revealsheteogenously enhancing small subcentric sized nodular lesion in medial limb of left adrenal gland suggestive of left adrenal adenoma, hrct thorax (using 1mm thick axial scan) shows brochiectatic changes in middle lobe and fibrotic changes, haemoglobin 13.3g%,wbc 6980/cm^3, platelet 1.52 lacs, t.bilirubin 2.05mg%,d.bilirubin 0.44, na/ k 133.6/3.82 meq/l, urea/creatinine 27.2/0.79, s.albumin 3.46g%,s.total protein 6.54g%, vma estmation 0.6 mg/24 hour, urinary volume for vma; on airway assessment mallampatti grade 1 with loose lower incisors, morning fbs 104, S. Acetone negative.

Preoperatively vitals pulse 84, blood pressure 160/100,on auscultation bilateral air entry present with normal heart sounds.all routine monitors were attached, and peripheral venous access was established. A 18g epidural catheter was inserted at l_{2-3} interspace, and 12 ml of 0.25% bupivacaine was given as a bolus dose. Approximately, 10-12 min after the bolus dose, patient was pre-medicated with inj. Glyco 0.2 mg i.v., inj. Emset 4mg i.v. fentanyl 100 mcg, and induced with propofol 200mg, scoline 100, and trachea was intubated after giving atracurium 25 mg. The lungs were ventilated with 100% oxygen and sevoflurane 1 minimum alveolar concentration. The anaesthesia was maintained with sevoflurane, and intermittent incremental dose of atracurium (5mg) as needed. The left radial artery was selected for direct arterial pressure monitoring as the pulse was fair volume and was easily accessible. Right internal jugular vein was cannulated for central venous catheter placement. Intraoperative monitoring included ecg, pulse oximetry, body temperature, capnography, blood sugar level, blood gases, urine output and central venous pressure (cvp). Once arterial blood gas analysis was available, ventilation was adjusted to maintain normocarbia. Epidural infusion of bupivacaine 0.125% was used for intraoperative and post-operative analgesia. Intra-operatively, cvp was maintained between 6 and 8 cm of water, and the patient remained haemodynamically stable. The surgery lasted 4 h and the blood loss was 300 ml. A total of 3.5 l of crystalloids ,950 ml pcv +450 ml ffp were given intra-operatively with intraoperative urine output of 1700ml.post operatively abga shows $PO_2$158.8, PCO_2 60.6, ph 7.29, h^+ 51.2, HCO_3 24.8,O_2 saturation 98.6. The patient was extubated at the end of the procedure. The entire perioperative course blood pressure was highly fluctuating so inj noradrenaline and inj nitroglycerine started and titrated accordingly. Patient was observed in intensive care unit for 24 h and then shifted to the ward. The pathology report of the mass came back with a result confirming the mass as benign adrenocortical adenoma. He was discharged on the 8th post-operative day and referred to an endocrinologist for further care.

DISCUSSION

Adrenal adenomas constitute an emerging clinical entity due to the increased use of abdominal imaging for diagnostic purposes. Most often, it consists of benign-nonfunctioning lesions.

The two main concerns with regard to an adrenal adenomas are whether it is hormonally active or malignant. Although, in general, the majority of adrenal adenomas are nonhypersecretory adenomas, hormonal screening evaluation can reveal a significant number of cases of clinically unsuspected hormone-secreting adrenal tumors. So a careful personal and family history, review of systems, and physical examination should be performed in all patients. Screening for pheochromocytoma is mandatory in all cases because of this condition's high rates of morbidity and mortality, as well as because of its unpredictable course. It is completely asymptomatic in up to 15% of cases. The adrenal tumor size has been used to differentiate between benign and malignant adrenal masses. Risk of malignancy increases with the adrenal tumor size, cutoff values ranging from 4 to 6 cm have been proposed by different clinicians for surgical resection of adrenal masses. This patient did not receive any antihypertensives as preoperative medications because she had no hypertension or symptoms of catecholamine secretion, and her biochemical tests and hormonal results did not give any clue that this patient could have secreting mass. In spite of that the intraoperative plan takes into account the high possibility of occurrence of hypertensive crisis and other events. For these reasons patient had the arterial and central line in place with emergency drugs ready and handy.

In conclusion, adrenal masses will continue to rise demanding the need to establish a protocol approaching these patients to reach the optimum outcome in managing adrenal adenomas. It is mandatory that the endocrinologist as well as the urologist and anesthesiologist reach an understanding of the nature and pathophysiology of the adrenal adenomas and be incorporated in taking the decisions as how best to manage such patients and tailored the plan according to the patient's situation. We suggest further prospective or case control studies regarding specialized procedures and to monitor the hemodynamic response during these procedures.

REFERENCES

Miller's anaesthesia 8th edition, vol1, 2015, pg.1170, 1109, 358

Myklejord DJ. Undiagnosed pheochromocytoma: The anesthesiologist nightmare. *Clin Med Res*., 2004; 2:59-62.

Soelting's anaesthesia and coexisting disease, 6th edition, 2012, pg.393

Yao and artusio, 7thedition, 2012, pg. 768

****