

Epidural Anesthesia for Intracapsular Neck of Femur Fracture with Pituitary Macroadenoma

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How to cite this article:

Vamshi Bharadwaj, Sirajuddin/Epidural Anesthesia for Intracapsular Neck of Femur Fracture with Pituitary Macroadenoma/Indian J Anesth Analg. 2022;9(6)305-307.

Abstract

Anesthesia for patient with pituitary adenoma posted for non-neurosurgical surgeries is a challenge to the anesthesiologist with the risk of sudden change in intracranial dynamics during administration of spinal anesthesia or during stress response of general anesthesia. We reported a case of intracapsular neck of femur fracture with pituitary macroadenoma managed with epidural anesthesia.

Keywords: Epidural anesthesia; Femur fracture; Pituitary macroadenoma.

INTRODUCTION

Pituitary adenomas are classified into microadenomas (<10mm), macroadenomas (10 mm), and giant adenomas (40 mm).¹ Pituitary carcinomas with distant metastases are rare, occurring in 0.1% to 0.2% of cases. If an MRI shows the tumor impinging on the optic chiasm, then formal visual field testing is indicated.² An evaluation for hypopituitarism should be carried out in all patients with macroadenomas and even large (6-9 mm) microadenomas. Diabetes insipidus is rarely

seen with pituitary adenomas. About two-thirds of pituitary adenomas may secrete excess hormones.³

Pituitary tumours may present in different conditions such as, hormonal hyper secretory syndrome like hyperprolactinomas, acromegaly and Cushing disease or with mass effect causing visual disturbance and signs of raised intracranial tension. Sometimes they present with non-specific symptoms like infertility, headache, epilepsy, pituitary hyposecretion or may be detected during imaging for some other condition.⁴

Anesthesia for patient with pituitary adenoma posted for non-neurosurgical surgeries is a challenge to the anesthesiologist with the risk of sudden change in intracranial dynamics during administration of spinal anesthesia or during stress response of general anesthesia. There is a chance of increase in tumour size during antenatal period.⁵ A careful assessment of pituitary function and a screening of visual field and fundus examination are essential to rule out any mass effect.⁶ We reported a case of intracapsular neck of femur fracture with

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Received on: 12.08.2022

Accepted on: 15.09.2022

pituitary macroadenoma managed with epidural anesthesia.

CASE REPORT

A 50 years old male patient complaint of pain and swelling in the left hip, inability to bear weight in left lower limb. Patient gave history of fall at home. Patient gave history of road traffic accident while on 2 wheeler hit by 3 wheeler 1 day ago. Patient past medical history was non-contributory.

A thorough examination was carried out. Patient was lying supine with both axis at same level. Hip had flexion, external rotation with shortening present. Range of motion was painful and limited. Popliteal artery, posterior tibial artery and dorsalis pedis artery was non-palpable. Chest and pelvic compression was negative. Left SLRT was positive and left was negative. No spinal bone was tender. On X-ray (AP and lateral), patient was diagnosed as intracapsular neck of femur fracture. Injury severity score (ISS) was 9. Pawwells angle was -60 degree.

Laboratory tests showed serum testosterone 234 mg/dl, LH- 3.66 mg/dl, FSH- 8.55 mg/dl, GH- 0.065 µg/ml, serum cortisol 6.4 µg/dl, prolactin 11.84 µg/dl, TSH-3.8 µg/dl, T4-6.5 µg/dl, T3- 0.86 µg/dl. MRI revealed suprasellar SOL 3.3X 2.1X 3.2 cm. Hormone profile was suggestive of hypopituitarism. Patient was referred to ophthalmology department for fundoscopy and on examination no abnormality was found. Patients was planned for surgery.

Patient was NBM pre-operatively. PAC review was done. Soap water rinse was done 2 hours before surgery. Preparation and marking of the limb followed by administration of inj. Tetanus 0.5 IM stat was done. Inj. lignocaine test was done. Patient was informed regarding the anesthetic options and perioperative risk involved in regional and general anesthesia. Patient preferred to remain awake during delivery. Aspiration prophylaxis was given 30 min before surgery. Patient was monitored using electrocardiogram, pulse-oximeter and non-invasive blood pressure. Under aseptic precaution an 18 G epidural catheter was placed at L3-L4 inter space using 18G Tuohy needle. Epidural space confirmed with loss of resistance technique and test dose of 3 ml of 1.5% lignocaine with adrenaline 5 µg/ml was given. Nine ml of 2% lignocaine was given in incremental doses after negative aspiration for blood and CSF. A wedge was placed under right side of pelvis to minimize aorto-caval compression.

Level of analgesia was T-8. Bromage scale was 4. Bipolar cemented hemiarthoplasty under SA was performed. Patients condition was stable.

DISCUSSION

Approximately 10% of unselected pituitaries (meaning those from individuals without known pituitary disease) examined at autopsy contain pituitary adenomas.⁷ Magnetic resonance imaging (MRI) scans of normal volunteers also show a 10% prevalence, but other pathologic entities may have a similar appearance, such as Rathke cleft cysts and metastatic tumors.⁸ Not all patients with pituitary tumors develop symptoms because most tumors remain small and most do not secrete hormones in excessive amounts.⁹ Knowledge of the normal anatomy and physiology of pituitary gland is necessary to understand the pathophysiological effects relevant to anesthesia and for appropriate preoperative preparation, intra and postoperative management of complications.¹⁰ A careful assessment of pituitary function and a screening of visual field and fundus examination are essential to rule out any mass effect.¹¹ Mass effect of a tumour on adjacent structures is more likely to occur with non-functioning macroadenomas. By compression of pituitary gland in sellaturcica by hemorrhage into pituitary or very rarely by postpartum pituitary infarction (Sheehan's syndrome). Compression of optic chiasm results in bitemporal hemianopia. In pituitary apoplexy, third cranial nerve palsy can occur.¹²

We avoided general anesthesia in this patient because of the possible risk of an acute increase in intracranial pressure associated with laryngoscopy and tracheal intubation. The patient preferred regional anesthesia as well. Also, an awake patient would alert early in the event of an intracranial complication. We avoided spinal anesthesia because of possible decrease in intracranial pressure due to cerebrospinal fluid leak in postoperative period, if multiple attempts were made. Akashi N et al.¹³ reported a caesarean section successfully performed with epidural anesthesia, the pituitary tumour was removed trans-sphenoidally under general anesthesia. Therefore, we decided to go ahead with epidural anesthesia. There are reports of safe use of epidural block for labour analgesia and caesarean section in patients with intracranial tumours. We had taken care to administer the epidural drug slowly to minimise this effect and there was no adverse event in the intra and postpartum period.

CONCLUSION

The epidural anesthesia may be used safely for in patients with intracapsular neck of femur fracture with pituitary macroadenoma. The epidural placement should be performed by an experienced anesthesiologist preferably with ultrasonographic guidance.

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