

Anaesthetic Management of Cesarean Section in a Patient With Acoustic Neuroma

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CASE REPORT

26 yrs booked Primigravida weighing 60 kgs and 154 cms presented at 32 weeks of gestation to OBG department of our hospital with complaints of headache & vomiting for 15 days, tingling sensation on left cheek 7 days and blurring of vision since 3 days. Headache was localized to right side of face, more in the morning associated with vomiting which was projectile in nature. Headache would usually subside after vomiting. Tingling sensation on the right cheek was present since 7 days. It was more in the morning, and on exposure to cool breeze & relieved on exposure to sun light. Blurring of vision and diplopia was more in the right eye.

On examination she was conscious oriented with mild pallor. The Pulse was 86/ min. & BP was 128/ 74 mmHg. Cardiovascular and respiratory system were normal, abdominal examination revealed 32 weeks size uterus with foetus in cephalic presentation and good foetal heart sound. Neurological examination revealed involvement of trigeminal nerve on right side. Gross sensory and motor functions were normal with mild cerebellar signs on right side. Ophthalmic examination showed decreased vision and features suggestive of papilloedema. Airway & spine were normal. Complete haemogram and urine examination were within normal limits.

	Right	Left
Vision	Hand moment close to face	6/36 WPH 6/9
Pupil	3mmRL	3mmRL

(WPH with pin hole, RL - reactive to light.)

MRI revealed a large well defined, extra axial infratentorial mass measuring about 4.4x3.5x4 cms in right Cerebello Pontine angle. Medially there was an extension across midline with slight extension into the internal auditory canal. Fourth ventricle was squashed and displaced to left. Mid brain and pons were deviated to left. Right lobe of cerebellum was compressed and draped over the postero-inferior aspect of the mass. Lateral and third ventricles were moderately dilated.

USG showed single live intrauterine fetus of 30+3 weeks of gestation in cephalic presentation. Placenta was anterior grade 1.

Acoustic neuroma was suspected and she was referred to higher centre for further evaluation, where the diagnosis was confirmed as Vestibular schwannoma (Acoustic Neuroma) With Hydrocephalus and Failing vision. Plan as per the neurocentre was for terminating the pregnancy first and definitive surgery for acoustic neuroma later.

She was referred back to us for terminating the pregnancy. By this time period of gestation was 34 Weeks & 2 days.

Anaesthetic Management

Pre anaesthetic goals were to maintain haemodynamic stability, avoiding hypoxia, hypercarbia and acute fluctuations in ICP so general anaesthesia with controlled ventilation was planned.

With routine acid aspiration prophylaxis and basic non invasive monitors, Inj Phenytoin sodium 100mg and Inj 3% was given.

Preoxygenation was done with 100% oxygen for 5 minutes & anaesthesia induced with Inj. Glycopyrolate 0.2 mg. Inj. thiopentone sodium (titrated to abolition of eye lash reflex) and inj. fentanyl 50 µg i.v. Pressor response was attenuated with inj Lidocaine 1.5 mg/kg and titrated doses of inj Esmolol. Endotracheal intubation with 6.5 mm ET was facilitated with inj. vecuronium bromide 6 mg i.v. Anaesthesia was maintained with Isoflurane 0.2-1% in oxygen. Nitrous oxide was added after delivery of baby.

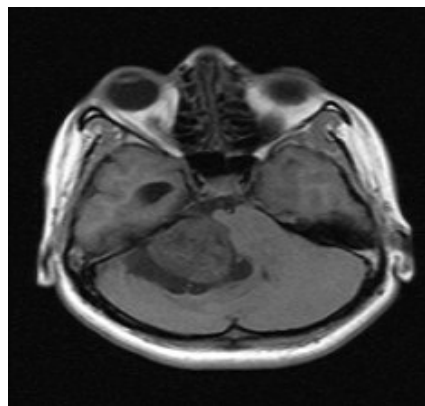


Figure 1

T 1 axial film: Large mass compressing right lobe of cerebellum

A single live preterm baby extracted. Baby cried immediately after birth with APGAR score of 7 and 9 at one and fifth min respectively. 20 IU of Oxytocin was added to the drip.

Extubation was carried out under deeper planes of anaesthesia and reversal of neuromuscular blockade achieved with inj Glycopyrrolate 0.4 mg & inj Neostigmine 2.5mg i.v. Patient was haemodynamically stable perioperatively, with occasional rise in B.P managed with inj Esmolol. Recovery was smooth and uneventful.

Surgical site infiltration with inj. Bupivacaine 0.25% 10cc prior to extubation and fentanyl 50 µg i.v. 8 hourly and Diclofenac 75mg suppository were given for postoperative pain.

One week after surgery patient was referred to the Neurocentre where she underwent ventriculoperitoneal shunting. Following the procedure she was shifted back home with the advice for definitive surgery at later date.

DISCUSSION

Even though the incidence of vestibular schwannomas is not higher in pregnancy than in non-pregnant age-matched patients, it may become symptomatic in pregnancy. Symptoms such as tinnitus, headache and nausea are common and non-specific presenting complaints, which are often attributed to pregnancy itself and may, therefore, delay the diagnosis of an acoustic tumour.¹ Headache and high blood pressure in the late stage of pregnancy can also be mistaken for pre-eclampsia, when high ICP is present.²

Small vestibular schwannomas usually present with only hearing abnormalities or tinnitus. However, larger tumours may present with headache and vomiting (due to obstructive or communicating hydrocephalus), ataxia and cranial nerves involvement (including trigeminal, facial, glossopharyngeal and vagus nerves).² Large tumours may compress the surrounding structures, cranial nerves and produce pressure symptoms. (Trigeminal nerve was involved in the present case).

Failure to diagnose a large lesion compressing the brain-stem may cause sudden deterioration, and an attempted delivery in the presence of untreated high ICP can be disastrous.¹

Two main issues need to be addressed: Firstly the timing and kind of procedures needed to remove the tumor and to decrease the high ICP, and secondly the mode and timing of delivery.

Various Methods to control ICP during anaesthesia include: hyperventilation. CSF drainage; Diuretics like furosemide or use of the osmotic diuretic mannitol which may cause redistribution of water from the fetus to the mother leading to foetal hypovolemia; Corticosteroids; Anaesthetic agents like Thiopentone, lignocaine, and isoflurane; and Surgical decompression.^{1,2}

Combined obstetric and neurosurgical management can give excellent results. When an acoustic neuroma with no neurological signs and with normal intracranial pressure is diagnosed during pregnancy, vaginal delivery may be planned with a low maternal risk. In stable patients with small tumours and hearing loss only, no intervention is required before delivery.²

Finally, only multidisciplinary and cooperative teamwork involving an obstetrician, neurosurgeon, anaesthesiologist and paediatrician involved can lead to a possible excellent prognosis in difficult cases of acoustic neuromas, diagnosed in the late stage of pregnancy.²

REFERENCES

1. Beni-Adani L, Pomeranz S, Flores I, Shoshan Y, Ginosar Y, Ben-Shachar I. Huge acoustic neurinomas presenting in the late stage of pregnancy. *Acta Obstet Gynecol Scand* 2001; 80: 179 - 184.
2. Sharma JB, Pundir P, Sharma A. Acoustic neuroma in pregnancy: emergency cesarean section and definitive neurosurgery. *International Journal of Gynecology and Obstetrics* 2003; 80: 321-323.



NOTICE GENERAL BODY MEETING (GBM)

General Body Meeting of "Research Society of Anaesthesiology Clinical Pharmacology" will be held on 23rd October, 2010 at 4 PM during RSACPCON 2010 being organized at JANA JYOTI AUDITORIUM Bangalore from 22nd to 24th October 2010. Elections to the vacant posts of office bearers / executive members will also be held.

All members of RSACP are requested to attend.

Dr. Avtar Singh
Secretary, RSACP.