

Anaesthetic management of pregnant patient with Bell's palsy for emergency lower segment caesarean segment- A case report

Names of the authors-

1. DR RASHMI

MD Anesthesia Senior Resident Department of Anesthesia and Critical Care
Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- rashi.singh65@gmail.com

2. DR SONAM MEENA

MD Anesthesia Junior Resident Department of Anesthesia and Critical Care Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- meenasonam468@gmail.com

3. DR DIKSHA GULIA

MD Anaesthesia Junior Resident Department of Anesthesia and Critical Care
Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- diksha.gulia.0@gmail.com

4. DR PRAVESH KUMAR

MD Anaesthesia Junior Resident Department of Anesthesia and Critical Care
Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- kumarparvesh3245@gmail.com

5. DR DEVYANI VERMA

MD Anaesthesia Junior Resident Department of Anesthesia and Critical Care
Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- dvdevyaniverma@gmail.com

6. DR MOHD IRFAN

MD Anaesthesia Junior Resident Department of Anesthesia and Critical Care
Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India
Email id- irfangobinspur@gmail.com

The manuscript has been read and approved by all the authors. The requirement for authorship have been met and each author believes that the manuscript represent honest work.

Corresponding author

Dr Rashmi

Senior Resident Department of Anesthesia and Critical Care Pt. B. D. Sharma PGIMS,
Rohtak-124001, Haryana, India
Email id: rashi.singh65@gmail.com
Phone No. 9557283508

Abstract

Bell's palsy is unilateral, idiopathic palsy of seventh cranial nerve with partial or complete weakness of one half of face. Risk factors include pregnancy, preeclampsia, diabetes, hypertension and obesity. In pregnancy it is more common in third trimester and puerperium. Increase in total body water by fluid retention leading to local oedema and nerve pressure may be the etiological factor for bell's palsy in pregnancy. Obstetric indication must be the identifier for mode of delivery and anaesthesia as mode of delivery has not shown any effect

on prognosis and development of Bell's palsy. There is no evidence of viremia and no signs of meningitis in patients of Bell's palsy so spinal anaesthesia can be given safely.

Key words: Idiopathic, Lower segment caesarean section, Pregnancy, Seventh cranial nerve

Introduction

Bell's palsy is unilateral, idiopathic palsy of seventh cranial nerve with an annual incidence of 15 to 20 per one lakh persons.[1] There is partial or complete weakness of one half of face. Risk factors include pregnancy, preeclampsia, diabetes, hypertension and obesity.[2] 70 percent of patients have complete recovery even without treatment.[1] The present case is about anaesthetic management of pregnant patient with Bell's palsy for lower segment caesarean section.

Case report

The patient was a 28 year old gravida three para two live one and abortion one with 38 weeks 2 days of gestation with oligohydramnios with previous two lower segment caesarean sections. She presented with complains of left side deviation of mouth with inability to close left eyelid. There was no history of decreased hearing, ear discharge, decreased salivation, hyperacusis, loss of sensation in anterior two third of tongue, decreased lacrimation and fever. There was no history of increase in blood pressure, headache, blurring of vision, epigastric pain and pedal oedema. No past history of any other chronic medical illness was present. She was diagnosed with Bell's palsy and tablet prednisolone 80 mg per day, tablet vitamin B complex two times a day and physiotherapy was started for the same. Two days after presenting to the hospital her symptoms started to improve.

She was posted for emergency lower segment caesarean section in view of foetal distress. Her all routine blood investigations were within normal limits, with haemoglobin of 9.6 mg/dl. General physical and systemic examination was normal. Airway examination showed normal mouth opening with left side deviation of mouth and Mallampati grade II.

Ant-aspiration prophylaxis was given with injection metoclopramide 10 mg intravenous (i.v.) and injection pantoprazole 40 mg i.v. After obtaining consent for surgery and anaesthesia patient was shifted to operation table. Consent for publication was obtained from the patient. Routine monitors electrocardiogram, non-invasive blood pressure, pulse oximeter were attached. Here baseline heart rate was 88 per minute, blood pressure 128/84 mm of Hg and saturation 100 % on air. Spinal anaesthesia was given in sitting position with 25 G Quincke's needle with 1 mg of bupivacaine heavy. 15° left uterine tilt was given in supine position and oxygen supplementation was given by simple face mask. A male baby of 3.1 kg was delivered three minutes after spinal anaesthesia. Apgar score was 7, 8, 10 at 1, 5 and 10 minute after delivery. Her vitals remained stable during the entire operative time. Blood loss was around 550 ml and 2 L of ringer lactate solution was given. Post operative period was uneventful and patient was discharged on fifth post-operative day.

Discussion

Bell's palsy is unilateral, idiopathic palsy of seventh cranial nerve.[1] Diagnosis of Bell's palsy is mainly a diagnosis of exclusion and is primarily determined based on physical examination.[3,4] Symptoms range from mild fatigue to severe paralysis of muscles of same side and usually occur suddenly and reaches a peak within 48 to 72 hours. Patient may present with inability to close or blink eye, drooping of half face, sagging of ipsilateral

eyebrow, drooping of corner of mouth, drooling of saliva, flattening of nasolabial fold, pain around ear, decreased hearing, dry mouth or dry eye.[3]

Risk factors include hypertension, diabetes, pregnancy, obesity and people with upper respiratory tract infection.[3] In pregnancy it is more common in third trimester and puerperium.[5] Pregnancy induced hypertension is five times more common in patients with bell's palsy than in normal pregnancy.[6] Increase in total body water by fluid retention leading to local oedema and nerve pressure may be the etiological factor for Bell's palsy in pregnancy.[5] Relationship between carpal tunnel syndrome and pregnancy has been known showing correlation between oedema and nerve compression.[7] Pope suggested multiple etiologies in pregnancy like local oedema in the bony canal due to vascular oedema, toxic neuritis gravidarum, aseptic bone necrosis around the nerve, small haemorrhages, thrombo-embolic problem or retrograde inflammation of chorda tympani.[8] Bell's palsy may occur due to localised infection of nerve ganglia by activated herpes simplex due to immunological alteration in pregnancy.[5] This patient also had onset of symptoms in third trimester of pregnancy.

Patients showing signs of recovery within three weeks of onset of symptoms have more chances of complete recovery.[3] Prognosis is even better in young patients[5] but there is always a risk of residual paresis. This patient started showing improvement in muscle tone after two days of presentation. Treatment options include antivirals, multivitamins, steroids and physiotherapy in the form of infrared radiations, exercise and massage.[5] Prednisolone and other steroids may speed up recovery of facial actions and expressions by reducing nerve swelling. Medications are most effective when started within 48 hours of onset of symptoms.[9] Risk of corneal abrasion can be minimized by using lubrication and patching the affected eye before bedtime.[1]

Obstetric indication must be the identifier for mode of delivery and anaesthesia as mode of delivery has not shown any effect on prognosis and development of Bell's palsy.[10] There is no evidence of viremia and no signs of meningitis in patients of Bell's palsy so spinal anaesthesia can be given safely.[6] Facial nerve injury has been documented in general anaesthesia in 0.03-1.4% of cases if mask is held tightly or inappropriate size of endotracheal tube or supraglottic device is used. Variable and superficial course of facial nerve can lead to injury following general anaesthesia.[11]

As the patient did not have any signs of meningitis and there was no other contraindications to spinal anaesthesia so a plan to proceed with spinal anaesthesia is made.

Conclusion

Bell's palsy is unilateral, idiopathic palsy of seventh cranial nerve with partial or complete paralysis of one side of face. There is no evidence of viremia and no signs of meningitis in patients of Bell's palsy so spinal anaesthesia can be given safely for lower segment caesarean section if there is no other contraindication for spinal anaesthesia.

Acknowledgement: None

Source(s) of funding- None

Conflict of interest- None

Authors' contribution- All the authors have contributed to the writing, reading and approving all the facts presented in the presented manuscript.

References

1. Warner MJ, Hutchison J, Varacallo M. Bell Palsy. [Updated 2023 Aug 17]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK482290/>
2. Zhao H, Zhang X, Tang YD, Zhu J, Wang XH, Li ST. Bell's Palsy: Clinical Analysis of 372 Cases and Review of Related Literature. *Eur Neurol*. 2017;77(3-4):168-172. [[PubMed](#)]
3. Singh A, Deshmukh P. Bell's Palsy: A Review. *Cureus*. 2022 Oct 11;14(10):e30186. doi: 10.7759/cureus.30186. PMID: 36397921; PMCID: PMC9648613.
4. says RK. Bell's Palsy Recovery. [Aug; 2021]. 2009. <https://www.newsmedical.net/health/Bells-Palsy-Recovery.aspx>
5. Sungurtekyn U, Cyndap A. Predisposition to Idiopathic Facial Palsy (Bell's Palsy) in Pregnancy and Puerperium. *T Klin J Gynecol Obst* 1999; 9:38-40.
6. Dorsey DL, Camann WR. Obstetric Anesthesia in patients with idiopathic facial paralysis (Bell's palsy):A10-year survey. *Anesth Analg* 1993; 77:81-83.
7. Wilkinson M. The carpal-tunnel syndrome in pregnancy. *Lancet* 1960; 1:453-4.
8. Pope TH Jr. Bell's palsy in pregnancy.*Arch Otolaryng* 1969; 89:830-4.
9. Bell's palsy: aetiology, clinical features and multidisciplinary care. Eviston TJ, Crosson GR, Kennedy PG, Hadlock T, Krishnan AV. *J Neurol Neurosurg Psychiatry*. 2015;86:1356–1361. [[PubMed](#)] [[Google Scholar](#)]
10. ENT features. [Oct; 2022]. <https://www.entaudiologynews.com/features/ent-features>
11. Rajesh C, Kulbhushan S, Ankit S, Atul G, Bansal M, Parashar A. Facial nerve palsy after general anaesthesia, A less reported complication:Case report. *JOJ Case Stud*. 2016;1:555–8. [[Google Scholar](#)]