

Original Research Article

Bell's palsy An Association with PregnancyDr. Nidhi Mehta¹, Dr. Raghav Mehta², Dr. Ravindra Soni³, Dr. Megha Aggarwal⁴, Dr. Mukesh Dagur⁵¹Senior Resident (Obst. & Gyane), Sms Medical College, Jaipur²Assistant Prof. (Ent), Ruhs College Of Medical Sciences, Jaipur³Senior Resident (Ent), Ruhs College Of Medical Sciences, Jaipur⁴Assistant Professor (Obst. & Gyane), Sms Medical College, Jaipur⁵Senior Resident (Ent), Ruhs College Of Medical Sciences, Jaipur***Corresponding author**

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Abstract: The basic purpose of this study was to determine the association between Bell's palsy and pregnancy along with its demographic profile, associated complications, mode of delivery and effect on the newborn. A case series of 30 consecutive patients followed from starting of pregnancy to 6 months post partum. The study shows that Bell's palsy associated with Pregnancy is seen in Primigravidas with a clear association with preeclampsia and a propensity to occur in third trimester of pregnancy and immediate post partum condition. Along with maternal morbidity an association with preterm delivery and low birth weight is seen. Bell's palsy in Pregnancy is associated with preeclampsia thus a close monitoring for hypertension should be done. Also being associated with stressful activation of Herpes Simplex virus a reduction in associated stress related condition can be helpful especially in third trimester and immediate postpartum condition.

Keywords: Bell's palsy, Primigravidas, Herpes Simplex virus.

INTRODUCTION

One of the most famous paintings in the history is "Mona Lisa" by Leonardo da Vinci was studied and identified to be portrait of model Lisa Gherardini and smile of the portrait's model was due to Leonardo da Vinci's anatomically precise representation of a new mother affected by Bell's palsy subsequent to her recent pregnancy [1]. Bell's palsy (BP) is the most common cause of unilateral acute facial paralysis, with an estimated incidence of 24 to 40 per 100,000 persons [2].

It is seen to be more common in female. A correlation is usually seen in Bell's palsy and pregnancy but it tends to be missed by neurologist, otorhinolaryngologist and obstetrician. A number of potential mechanisms have been offered to explain the pathogenesis in BP, though reactivation of latent herpes simplex virus (HSV) within the geniculate ganglion is the most probable explanation. A unique feature of reported cases of BP in pregnancy is the presentation

within the third trimester or immediate postpartum period [3]. The basic purpose of this study was to determine the association between Bell's palsy and pregnancy along with its demographic profile, associated complications, mode of delivery and effect on the newborn.

METHODS

30 patients with Bell's palsy were identified during pregnancy and followed 6 months post-partum. All the patients were identified in SMS Medical College, Jaipur and RUHS College of medical sciences, Jaipur in Departments of Obstetric & Gynecology and Otorhinolaryngology from a period of April 2015 to December 2016 and followed properly with their records and repeated physical examination. A constant BP monitoring, fetal monitoring was done along with maternal age, gravidity, past medical records, record of any complications and mode of delivery.

RESULTS AND DISCUSSION**Table 1: Age Correlation**

Age	n	Percentage
<20	2	7%
20 – 35	21	70%
>35	8	23%

As clearly seen from the above table maximum cases of BP associated with Pregnancy were between age of 20 -35 years of age this may not be a clear association as most pregnancies occur during this age group Also in this group it was more commonly seen in

higher age spectrum which may give us an indication as high age pregnancy might have an association. Though further studies need to be done in this aspect before reaching any conclusion.

Table 2: Gravidity

Gravidity	n	Percentage
G1	22	74%
G2	4	13%
G3	1	3%
G4	1	3%
G5	2	7%

Primigravida are shown to be more prone to Pregnancy induced Bell’s palsy. This may have clear association with higher stress associated with first

pregnancy as latent Herpes Simplex is known to become active with stress related conditions.

Table 3: Associated complaints

Factors	n	Percentage	Rate expected in normal population
Pre-eclampsia	12	40%	3.5% [4]
Gestational hypertension	5	16%	5% [4]
Diabetes	1	3%	-
Previous bell’s palsy	2	7%	-

A 40 percent of women with Bell’s palsy in pregnancy are shown to suffer from Pre-eclampsia which is statically significant as in compared to only 3.5 % of general pregnancies show features of

Preeclampsia. Even gestational Hypertension is shown to be present more (i.e. in 16% cases) in compared to normal pregnancy rate of 5%.

Table 4: Mode of delivery

Mode	n	Percentage	Rate expected in normal population
Normal	2	7%	-
Instrumental/induced	8	27%	13% [5]
C-section	20	66%	20% [5]

Clearly seen from the above chart that operative and instrumental/induced delivery are more common in patients associated with Bell’s palsy in pregnancy. This may be associated with other

accompanying conditions like pre-eclampsia, gestational hypertension or stress related to the ongoing condition

Table 5: Birth Condition

Condition	n	percentage	Rate expected in general population
Preterm	6	20%	7.1% [5]
Birth Weight <2500g	8	27%	5.8% [6]
Congenital Anomaly detected at birth	1	3%	2.9% [7]

Overall higher number of preterm and LBW deliveries are seen in this condition. Though no clear

pathophysiology can be identified but a clear inclination towards fetal growth retardation is seen.

Table 6: Trimester of representation

Trimester	n	percentage
First	1	3%
Second	1	3%
Third	25	84%
Post-partum	3	10%

A clear preponderance of Pregnancy associated BP is seen in third trimester and immediate post-partum period. Physiological changes during pregnancy have been postulated to contribute to or cause the onset of acute facial paralysis, including a hypercoagulable state, hypertension or eclampsia, increase in total body water, changes in the levels of estrogen and progesterone,

increased cortisol levels, immunosuppression, and increased susceptibility to viral infections, particularly the herpes simplex virus [8]. Also reactivation of oral HSV in the immediate post partum period is increased by the use of epidural analgesia allowing speculation that some post partum Bell’s palsy cases may be a consequence of anesthetic management in labor.

Table 7: Condition 6 months post partum

Condition	n	Percentage
Full resolution 2 weeks postpartum	19	63%
Full resolution by 6 months	9	30
Residual facial weakness	2	7%

Generally a full recovery occurs in 63% of Cases within two weeks, few cases (9) took a longer time but showed full resolution in around 6 months. Two cases had residual facial weakness permanently

CONCLUSION

Though a relatively less known and even less recognized problem Bell’s palsy in pregnancy is an established menace. A clear association with pre-eclampsia and representation in last phase of pregnancy shows that a clear stress related association is present. It is a recognizable and noteworthy problem as it tends to increase the maternal morbidity both physically and psychologically, also it tends to increase fetal development and maturity. An increase in induced or surgical delivery is also commonly seen. And last though the condition tends to resolve on its own a few cases did show residual facial weakness and propensity to recur in next pregnancy

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