

RELATIONSHIP BETWEEN THE ONSET OF FACIAL PALSY DURING PREGNANCY AND THE DEVELOPMENT OF GESTATIONAL COMPLICATIONS

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ABSTRACT

Objectives: To assess the relationship between the onset of facial palsy during pregnancy and the increased incidence of gestational and foetal complications.

Methods: This is a retrospective study of thirty six female patients who presented with facial palsy during pregnancy or puerperium, and were identified by hospital records in the ENT and obstetric gynaecology clinics at King Hussein Medical Centre in Jordan over ten years period between January 1995 and January 2005. Information were recorded about medical and obstetrical history, time of onset of facial palsy and associated maternal complications including gestational hypertension and pre-eclampsia, delivery mode, premature delivery and increased incidence of caesarean section as well as foetal complications such as low infant birth weight, congenital abnormalities and twin births.

Results: Over a period of 10 years, 36 pregnant women with facial palsy were seen in the ENT and obstetric gynaecology clinics at King Hussein Medical Centre. The peak time of onset of facial palsy was in the 34th week of gestation. Pre-eclampsia was diagnosed in nine pregnant women (25%), while gestational hypertension was diagnosed in three patients (8.3%). The overall incidence of both pre-eclampsia and gestational hypertension was 33.3% (12 patients), which is six times more than in general population. The incidence for caesarean section is 38.9% (14 patients), and 33.3% (12 patients) for induced vaginal delivery, 25% (nine patients) for preterm delivery, and 19.4% (seven neonates) for low birth weight (less than 2500g). These rates were also higher than in general population. It has been found that the incidence of congenital anomalies 2.7% (one baby) and twin births 5.6% (two twins) are within the general population rates.

Conclusion: Facial palsy in pregnancy is associated with gestational and foetal complications, particularly in the third trimester. This information should be taken into consideration by all physicians involved in the counselling of these patients. Further studies are advised to support the results of this study.

Key words: Facial palsy, Gestational complications, Hypertension, Pregnancy, Pre-eclampsia

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Introduction

The main purpose of this study is to emphasize the increased incidence of gestational complications in women who develop facial palsy during pregnancy. The majority of previous studies concentrated just on the increased incidence of facial palsy during pregnancy and its time of onset.

Sir Charles Bell was the first to describe facial palsy (Bell's palsy) in 1830; he suggested a possible association of pregnancy with paralysis of the muscles of facial expression.⁽¹⁾ The incidence of Bell's palsy is three times higher during pregnancy and puerperium (38-45 women per 100 000 pregnancies versus 17 per 100 000 women per year in non-pregnant women of childbearing age).⁽²⁻⁴⁾ For women in the third trimester of pregnancy in particular, the calculated frequency rises to 118.2 cases per 100,000 births per year.^(2,5)

The aetiology of facial palsy in pregnancy is not well known. A lot of theories have been proposed such as viral origin.^(4,6) It has been found that the incidence of herpes simplex virus in pregnant females is higher than that in non-pregnant women,⁽⁷⁾ which may be explained by gestational immune suppression resulting from elevated cortisole levels during pregnancy.⁽²⁾ Other theories related facial palsy to toxæmia of pregnancy,⁽⁸⁾ high levels of progesterone and oestrogen,⁽⁹⁾ and increased interstitial fluid volume in pregnancy causing mechanical compression of the facial nerve in its bony canal in the temporal bone.⁽¹⁰⁾ Whatever the cause of facial palsy is, the prognosis for satisfactory recovery for pregnant women who develop complete facial paralysis is significantly worse than that for general population.^(4,5)

Methods

This is a retrospective study of thirty six female patients who presented with facial palsy during pregnancy or puerperium, and were identified by hospital records in the ENT and obstetric gynaecology clinics at King Hussein Medical Centre in Jordan over ten years period between January 1995 and January 2005. Information was recorded about medical and obstetrical history, time of onset of facial palsy and associated maternal complications including gestational hypertension and pre-eclampsia, delivery mode, premature delivery and increased incidence of caesarean section as well as foetal complications such as low

infant birth weight (less than 2500 grams), congenital abnormalities and twin births.

The early puerperium (seven days) was included in the pregnant study group because, in the early puerperium, women remain subject to the same influences of many of the changes that occur during pregnancy (e.g. hormonal changes, interstitial fluid volume) for up to several weeks after delivery.⁽⁵⁾

Pregnancy-induced hypertension develops after 20 weeks of gestation in previously normotensive women and resolves by three months postpartum; the pressure is considered high if it is greater than 140/90 mmHg, or if the diastolic blood pressure rises 15-25 mmHg above pre-pregnancy values. Pre-eclampsia was defined as a blood pressure more than 140/90 mmHg, with the additional presence of at least +2 proteinuria on dipstick or more than 300 mg of proteinuria over a 24 hours period. When such patients have convulsions, they should be considered to have eclampsia unless proved otherwise. Such patients are likely also to have proteinuria (more than 0.5g/24 hours, or at least +1 with urine dipstick testing).⁽¹¹⁾

Follow-up of one year was required for inclusion in this study. Patients who had incomplete facial paralysis, recurrent facial palsy, previous history of hypertension or surgery on the facial nerve were excluded. Five patients were excluded from this study for not satisfying these criteria.

Results

Over a period of 10 years, 36 pregnant women with facial palsy were seen in the ENT and obstetric gynaecology clinics at King Hussein Medical Centre. The peak time of onset of facial palsy was in the 34th week of gestation. Pre-eclampsia was diagnosed in nine pregnant women (25%), while gestational hypertension was diagnosed in three patients (8.3%). The overall incidence of both pre-eclampsia and gestational hypertension was 33.3% (12 patients), which is six times more than in general population. The overall incidence for caesarean section is 38.9% (14 patients) compared with 20% in general population. This increase is mostly secondary to the high incidence of both hypertension and pre-eclampsia in pregnant women with facial palsy. It has been found that the incidences of induced vaginal delivery 33.3% (12 patients) and preterm delivery 25% (nine patients) were also higher than in general population. (See Table I).

Table I. Incidence of gestational complications in pregnant women with facial palsy compared with general population (n= 36)

Complications	Number of patients	%	% in general population
Gestational hypertension	3	8.3	5 ^(13,15)
Pre-eclampsia	9	25	3.5 ^(13,15)
Pre-eclampsia and gestational hypertension	12	33.3	6 ^(13,15)
Caesarean section	14	38.9	20 ^(13,16)
Induced vaginal delivery	12	33.3	13 ^(13,16)
Preterm delivery before 37 weeks gestation	9	25	7.1 ^(13,16)

Regarding foetal complications, study data showed that out of thirty-six babies, seven neonates (19.4%) had low birth weight (less than 2500 grams in general) compared with 5.8% in general population. Low birth weight can be explained by the increased incidence of preterm delivery and caesarean section in pregnant women with facial palsy. The incidence of congenital anomalies 2.7% (one baby, 40 weeks) and twin births 5.6% (two twins) are within the general population rates (3% and 6% accordingly). (See Table II).

Table II. Incidence of foetal complications in pregnant women with facial palsy compared with general population (n= 36)

Complications	Number of patients	%	% in general population
Low birth weight less than 2500 grams.	7	19.4	5.8 ^(13,16)
Congenital abnormalities detected at birth	1	2.7	2.9 ^(13,17)
Twin births	2	5.6	5.7 ^(13,17)

Discussion

It is well-known that the incidence of facial nerve palsy is more during pregnancy (especially in the third trimester) than in general population.^(4,5,8,12) This is probably due to increased interstitial fluid volume causing increased mechanical pressure on

peripheral nerves such as facial nerve and median nerve in carpal tunnel syndrome which also increases during pregnancy.⁽¹¹⁾

There are few studies about the association between facial nerve palsy during pregnancy and the development of gestational complications. This study strongly supports this association which is evident from Table I. Our results are to a large extent similar to the previous findings obtained by Shmorgun et al. In their series the mean time of onset of facial palsy was 35.4 weeks gestation, the incidence of pre-eclampsia was 22.0% and 7.3% for gestational hypertension, together 29.3%. The observed rates of caesarean section was 43.6% and preterm delivery was 25.6%.⁽¹³⁾

Facial palsy can present at any age but most frequently seen at 20-50 years affecting both sexes equally.^(4,6,14) Facial palsy, of any aetiology, can be a psychologically devastating, bewildering event for the patient, so these patients (especially women) are in need for psychological support.^(4,5)

Without treatment 71% of patients with idiopathic non progressive facial palsy recover completely and 84% will have near-normal function, usually within few weeks, this percentage drops to 52% in pregnant women. Poor prognostic features include: complete palsy or severe degeneration on electromyography, no signs of recovery by three weeks, severe pain, Ramsay Hunt syndrome, and association with hypertension and diabetes.^(4,5,14)

Conclusion

Facial palsy in pregnancy is associated with gestational and foetal complications, particularly in the third trimester. This information should be taken into consideration by all physicians involved in the counselling of these patients. Further studies are advised to support the results of this study.

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