

# Predisposition to Idiopathic Facial Palsy (Bell's Palsy) in Pregnancy and Puerperium

## GEBELİK VE PUERPERİUMDA İDİOPATİK FASYAL PALSİ (BELL PALSİSİ) GÖRÜLME EĞİLİMİ

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### Summary

**Objective:** Although idiopathic facial palsy or Bell's palsy is an infrequent enigmatic disorder it has higher incidence in pregnancy and puerperium. Since obstetricians may be obligated to manage the Bell's palsy in relation to pregnancy, we wish to review this subject by a recently encountered case.

**Institution:** Celal Bayar University Hospital

**Material and Method:** A 23 year-old primigravid woman presented with Bell's palsy at 30th week of pregnancy.

**Results:** She was treated with physiotherapy and high dose B-group vitamins as soon as the diagnosis of idiopathic facial palsy was established. After she has delivered a healthy baby boy, complete reversal was confirmed.

**Conclusion:** Higher incidence in relation to pregnancy may be explained with Herpes simplex activation due to immunological alteration in pregnancy, causing local edema, and thus, resulting in neural compression. The prognosis is good, especially when the patient is young. The earlier physiotherapy is the key for better outcome.

**Key Words:** Idiopathic facial palsy, Bell's palsy, Pregnancy

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### Özet

**Amaç:** İdiopatik fasyal palsi (Bell palsisi) nadir ve nedeni bilinmeyen bir bozukluktur. Gebelik ve puerperiumda görülme insidansı daha yüksek olarak belirtilmektedir. Obstetrisyenler gebelikte böyle bir olgu ile karşılaşmış tedavi planını yapmak zorunda kalabileceği için, son zamanlarda karşılaştığımız bir olgu ile bu konuyu tekrar gözden geçirmek istedik.

**Çalışmanın Yapıldığı Yer:** Celal Bayar Üniversite Hastanesi

**Materyel ve Metod:** Gebeliğin 30. Haftasında idiyopatik fasyal palsi saptanan primigravid bir gebe

**Bulgular:** İdiopatik fasyal palsi tanısı konulunca derhal fizyoterapi ve yüksek doz B vitamini tedavisi uygulandı. Sağlıklı bir erkek bebek doğurduktan sonra, tam iyileşme saptandı.

**Sonuç:** Gebelikte idiyopatik fasyal palsinin daha sık görülmesinin nedeni, gebelikteki immun değişikliklere bağlı olarak, lokal ödeme yol açarak nöral bası yaratan Herpes simplex aktivasyonu yoluyla açıklanabilir. Prognoz, özellikle hasta genç ise oldukça iyidir. Erken fizyoterapi iyi sonuç için son derece önemlidir.

**Anahtar Kelimeler:** İdiopatik fasyal palsi, Bell palsisi, Gebelik

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Idiopathic facial palsy or Bell's palsy is an enigmatic disorder. Although the relationship between the pregnancy and puerperium with idiopathic facial palsy has already been known since it has first been reported by Sir Charles Bell (1), we still do not know its exact etiopathogenesis. There

are various hypotheses to explain the higher incidence of Bell's palsy in relation to pregnancy. In this article we are presenting a case with Bell's palsy, occurred at 30th gestational week.

### Case

Twenty three-year-old primigravid woman at 30 weeks of gestation presented with being unable to close her right eyelid, the loss of sensation on the right side of her face. She was regularly attending to antenatal clinic and her obstetric progress was normal except that she had herpes labialis, 3-4

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weeks before this paralytic situation. The examination was normal except the peripheral facial paralysis on the right. No active movement was recorded on this side. Other neurological examinations were normal. Physiotherapy consisting of infrared, massage, and exercise was planned, and medical therapy consisting of high dose group-B vitamins was considered. Infrared therapy was performed once a day and massages and exercises were carried out three times a day for 4 weeks. After the completion of this period, active movements, especially at the eyelids, on the affected side was noticed. With electromyography (EMG), distal latencies of neural transmission were normal in both branches of the nerve. With needle-EMG, there was denervation potentials at spontaneous activity of the orbicularis oris muscle, and increase in polyphasic action potentials at voluntary contraction of both orbicularis oris and orbicularis oculi muscles. These findings suggested both axonal degeneration and the existence of the regeneration. She had delivered a healthy baby boy (2850g of weight and 49 cm of height) vaginally at 37 weeks of gestation. She and her baby did well. She had complete recovery from facial palsy.

### Discussion

Despite more than a century has already passed by since its first establishment (1), obscured etiopathogenesis of idiopathic facial palsy still remains.

Bell's palsy affects women more than men (2). Pregnancy and puerperium, especially, creates a tendency towards Bell's palsy. The incidence of Bell's palsy related to pregnancy is estimated as about one in 2600 pregnancies or 45.1 in 100,000 births (2). Considering the estimated incidence among women in their childbearing ages, the incidence for pregnant women is about 3.3 times higher (3). It is more common in the last trimester of a pregnancy and puerperal period. Primigravidity or multiparity has been shown not to be important for the development of idiopathic facial palsy (2,4). Neither is the age of the pregnant woman is consequential.

Higher incidence among pregnant women is another puzzling situation of this disorder. Pope (5), in his excellent article, implied some changes

related to pregnancy might be the plausible explanation of this higher incidence. According to his suggestions, the etiology/etiologies may be a) toxic neuritis gravidarum, b) local edema in the bony canal due to vascular edema, c) small hemorrhages, d) aseptic bone necrosis around the nerve, e) sludging blood, f) retrograde inflammation of chorda tympani, g) thrombo-embolic problem.

Increased total body water in pregnancy may be the etiological factor in Bell's palsy with fluid retention resulting in local edema, which may act as nerve pressuring. The relation between the pregnancy and the occurrence of carpal-tunnel syndrome has also been shown, which stipulates nerve compression (6). It is interesting to note that there found five times more pregnancy induced hypertension in patients with Bell's palsy than normal pregnant population (4).

Localized infection in the nerve ganglia by activated Herpes simplex, which can be active during immunological weakness, may be the reason for Bell's palsy. Immunalteration is well known in pregnancy for years. The case, presented here had the evidence of Herpes simplex activation. There are reports of 100% incidence of Previous herpes simplex infection prior to idiopathic facial palsy, and cerebrospinal fluid examinations of patients with Bell's palsy revealed lymphocytosis and increased protein concentrations (4, 7). Reported exacerbations of Bell's palsy may support this idea.

Although none of the above hypothesis alone has adequacy to explain the etiology of Bell's palsy in pregnancy, addition of one to another might elucidate this disorder. We believe that the most plausible explanation would be an immunologic alteration due to the pregnancy followed by the activation of Herpes simplex virus -mostly- at one side causing inflammation resulting in local edema and consequent facial nerve compression on that side.

In general, the prognosis of Bell's palsy is very good, especially in young patients. The patient should be examined as earlier as possible. Electromyographic (EMG) examination should be applied since this would be objectively beneficial in follow-up of the patient. The corticosteroids were shown not to be beneficial for the pregnant women with Bell's palsy (2). Physiotherapy is the suitable management for such patients. We recom-

mend therapeutic heat (eg.infrared), massage, and exercise. The eye protection is also substantial.

The type of delivery is one of the important issues for patients with Bell's palsy. Until recently, the concern of the delivery did not get much attention (4). One may think that if the etiological factor is a virus, there may be a spread during epidural or spinal anesthesia. There is only one report of acute onset of Bell's palsy in a preeclamptic woman during a forceps delivery with epidural anesthesia, however in this report it has been concluded that this was no more than a temporal relation (8). Also there is no evidence of viremia accompanying Bell's palsy (4). If the virutic situation operates in idiopathic facial palsy, it is localized. In one study consisting of 36 patients with Bell's palsy, 20 delivered vaginally and the rest by Caesarean section, it was shown that the type of anesthesia, during vaginal delivery or Caesarean section, had no effect on the development or the prognosis of Bell's palsy (4). Thus, for the type of delivery and the anesthesia in such patients, obstetric indications should be the identifier.

In conclusion, although it is rare, an obstetrician may be obligated to manage the Bell's palsy in relation to pregnancy. Obscured etiology and, the

higher incidence in pregnancy of this disorder may be explained with Herpes simplex activation due to immunological alteration in pregnancy, causing local edema, and thus, resulting in neural compression. Earlier examination and management with physiotherapy is very important for the prognosis.

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