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## Four Cases of Chronic Recurrent Bell 's Palsy

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Idiopathic facial nerve palsy, or Bell 's palsy(BP) is an acute paralysis of the facial muscles innervated by the seventh cranial nerve. The cause and prognosis of recurrent BP are various. The frequency and heterogenicity of etiology suggest a predisposing factor or immune mechanisms. About 10% to 15% of patients with BP will suffer a recurrence, and less than 1.5% will have more than 4 episodes.

We report four patients of chronic recurrent BPs.

**Key Word:** Chronic recurrent Bell 's palsy

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### Background

Bell 's palsy(BP) is an acute unilateral paralysis of the facial muscles innervated by the seventh cranial nerve. Although the etiology of BP is unknown, it is thought to result from edema, entrapment, or inflammation of the seventh cranial nerve. A history of recent viral infection, especially herpes simplex, diabetes mellitus, pregnancy, or hypertension are all common risk factors that may precede the onset.<sup>1-3</sup> Idiopathic facial nerve palsy, or BP, is a common and important disease with a worldwide incidence of 20 cases per 100,000 people. While 10% to 15% of patients with BP will suffer a recurrence, less than 1.5% will have more than 4 episodes.

We report four patients who experienced chronic recurrent BPs.

### Case report I

A 20-year-old woman was admitted due to fifth attack of right BP. The patient had moderate to good movement of right forehead, could close eye with minimal effort and move mouth corner with slight asymmetry as Grade II facial palsy by House - Brackmann (HB) Facial Nerve Grading System. Associated symptoms were ipsilateral hyperacusis and postauricular pain. She had right BP at aged 7, 11, 18, 19 and 20, but the symptoms had fully recovered after medication for 1 month. The most severe event was presented at aged 7. At that time she had no movement of right forehead, unable to close eye with maximal effort and asymmetrical movement of mouth corner with maximal effort as grade IV by HB Facial Nerve Grading System.

Past history revealed pyogenic osteoarthritis, internal disc disruption of lumbar spine, hepatitis B carrier, and tension type headache. Family and social history were unremarkable.

Nerve conduction study showed a low CMAP amplitude in right facial nerve at aged 18. We studied brain CT, MRI, nerve conduction study and blink reflex at aged 20. There was no signifi-

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cant structural abnormality and pathological enhancement of both facial nerve pathways on brain image studies. And there was no electrophysiological evidence of conduction defect in bilateral blink reflex pathways at 7th day after onset of BP at aged 20.

The ESR, CRP, RF and FANA were also normal. She was recovered fully after acyclovir and steroid therapy for 2 weeks.

### Case report II

A 46-year-old woman was admitted due to third attack of BP. The patient had facial asymmetry at rest and no movement of left forehead and cannot close left eye with maximal efforts as Grade V facial palsy by HB Facial Nerve Grading System. She had right BP at aged 21 and 40, but the symptoms had fully recovered after medication for 1 month. Past and family history were unremarkable. We studied brain CT, MRI, nerve conduction study and blink reflex. MRI revealed a focal abnormal enhancement in the labyrinthine segment of left facial nerve. Low amplitude was seen in left facial nerve on nerve conduction study at 2nd day after onset of BP. The ESR, CRP, RF and FANA were normal. She was treated by acyclovir and steroid and recovered fully after 2 months.

### Case report III

A 44-year-old man was admitted due to second attack of BP. The patient looks normal at rest, but slight movement of forehead and could close eye with maximal effort as Grade IV facial palsy by HB Facial Nerve Grading System. He had left BP at aged 27, but the symptoms had fully recovered after herbal medicines with acupunctures for 1 month. Past and family history were unremarkable. We studied brain CT, MRI, nerve conduction study and blink reflex. MRI revealed a focal abnormal enhancement in the labyrinthine segment of right facial nerve. Low amplitude was seen in right facial nerve on nerve conduction study at 8th day after onset of BP. The ESR, CRP, RF and FANA were normal. He was treated by acyclovir and steroid for 1 week and now on follow-up treatment at OPD.

### Case report IV

A 76-year-old woman was admitted due to facial movement difficulty for 1 year. The patient looks normal at rest, but slight movement of bilateral forehead and could not open mouth fully with maximal effort as Grade IV facial palsy by HB Facial Nerve Grading System. She had left BP at aged 66 and right BP at aged 75, but the symptoms remained after herbal medicines with acupunctures for 2 months. She had operated for gastrointestinal stromal tumor at aged 71. We studied brain MRI, nerve conduction study and blink reflex. MRI revealed a focal abnormal enhancement in the labyrinthine segment of right facial nerve. Low amplitude was seen in right facial nerve on nerve conduction study 1 year after onset of BP. She has treated by electric physiotherapy on face and now on follow-up treatment at OPD.

### Discussion

BP is a form of facial paralysis or weakening that develops suddenly and with no known etiology. BP is associated with irritation or damage to the 7th cranial nerve. This nerve may become swollen and inflamed due to viral infections, trauma to the facial nerve, or pressure exerted by a tumor. The frequency and heterogeneity of etiology of recurrent facial palsies suggest a predisposing factor or immune mechanisms.<sup>4</sup>

In most cases, the disorder is temporary and resolves by itself, although it can recur on the same or the other side of the face. With or without treatment, 85% of patients begin to get significantly better within 2 weeks, and most recover completely within 3 months. For some, however, the symptoms may last longer. A history of recent viral infection, especially herpes simplex, diabetes mellitus, pregnancy, or hypertension are all common risk factors that may precede the onset.<sup>5-6</sup>

A 10-day course of oral corticosteroids is the recommended therapy for lessening its course and severity in some populations. Recent research recommends the addition of acyclovir for 10 days, suggesting a herpetic viral etiology. Close follow-up is imperative to prevent corneal injury and to monitor worsening of symptoms. Although most

patients recover within 1 to 6 months, incomplete recovery may be seen in severe or recurrent cases:<sup>7-8</sup>

In a small population of patients, the symptoms may never completely disappear and complete paralysis is permanent. In a larger population, some weakness or synkinesis is permanent.

The frequency of ipsilateral recurrence was equal to that for contralateral recurrence. The mean age at onset of BP was 33.0 years. BP recurred a mean of 9.8 years later. Recurrent facial paralysis did not indicate a worse prognosis for recovery regardless of which side was affected. There was no statistical difference between results for male patients or female patients, nor was there a statistically significant sex predominance.<sup>9</sup>

The unusual cause of recurrent BP is presented by leukemic infiltration of parotid gland, pregnancy, dental procedures, Sjogren's syndrome and cellular immunity abnormalities.<sup>10-14</sup>

The recurrent ipsilateral attacks showed a worse prognosis when compared with the non-recurrent palsies. In contrast, the recurrent attacks involving the contralateral facial nerve presented a better facial recovery. The recovery after multiple palsies appears to be worse than after a single palsy. And prognosis of chronic recurrent unilateral BP is poor than chronic recurrent bilateral BP.<sup>15</sup>

In our study, case I patient had recurrent pyogenic femur neck fracture and carrier of hepatitis B. And case IV patient had operated for gastrointestinal stromal tumor. But case II and III are not immunocompromised patient. Case I had 5 recurrences of ipsilateral attacks for 13 years and case II had 3 recurrences of bilateral alternating attacks for 26 years. Case III had bilateral attacks for 18 years, and case IV had bilateral attacks for 10 years.

Case I patient is younger than other patients, but she had more frequent recurrence and short interval between attacks. We assumed that immunocompromised condition affected the immune mechanism of case I and IV patient. And case IV patient is the most old patient at this study, so we assumed that her old age affected the prognosis of BP. Case I and II had fully recovered by acyclovir and steroid treatment, but

case III and IV are now on follow-up treatment at OPD.

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