Bell’s Palsy in the Eastern Province of Saudi Arabia

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During a 6-year period at the Neurology Clinic of King Fahd University Hospital, Al-Khobar in the eastern province of Saudi Arabia, 123 patients (72 males, 51 females) with idiopathic facial paralysis (Bell’s palsy) were seen. The peak frequency was in the third decade (32%); 67% of the cases occurred during October to March (cold season); 110 patients had single unilateral episodes, eight had an ipsilateral and one a contralateral recurrence. Recurrent episodes on both sides and simultaneous bilateral lesions were each observed in two cases. Although infrequent, the main identified associated clinical disorders or presumed predisposing factors were diabetes mellitus, hypertension, pregnancy and a preceding history of an upper respiratory tract infection. The prognosis was relatively good and only 15% had a severe deficit 3 months after the onset of symptoms.

Idiopathic facial paralysis is a common neurological disorder. It became associated with the name of Sir Charles Bell following his publication on the subject in 1821.\(^1\) The disorder is usually acute in onset, commonly unilateral and tends to occur only once in a life-time.\(^2,3\) Its cause is unknown but recent reports suggest a viral aetiology although circulatory disturbances have also been incriminated in its pathogenesis.\(^4-6\) The incidence of Bell’s palsy, has been estimated to be between 13 and 34/100 000 population/year in Western countries, is low in children but increases with age until the fourth decade after which it remains steady.\(^7-9\)

We report a 6-year experience of idiopathic facial paralysis (Bell’s palsy) in a university hospital in the eastern province of Saudi Arabia.
Methods
We reviewed all the patients referred to adult and paediatric neurology clinics at King Fahd University Hospital, Al-Khobar, Saudi Arabia, between January 1985 and December 1990 with a lower motor neuron type facial paralysis of acute onset. Only those with no identifiable aetiological cause were accepted for this study. The facial palsy was classified as simultaneous if the disability occurred on both sides within 1 week of each other.

Patients with congenital facial palsy or a specific definable cause such as herpes zoster infection, otitis media, Guillain-Barré syndrome, leprosy, sarcoidosis, ‘Meltersson-Rosenthal’ syndrome, or tumour (intra- and extracranial) were excluded.

Apart from basic data related to age, sex, nationality, date of onset, side of paralysis and clinical features, details of associated disorders such as diabetes mellitus, hypertension, pregnancy, family history of Bell’s palsy and history of previous facial paralysis were documented. The fasting blood glucose, a complete blood count and an erythrocyte sedimentation rate were performed for all the patients. The additional relevant investigations performed when indicated included brain computerized axial tomography, cerebrospinal fluid analysis (microbiology, biochemistry, cytology, and serology), and electrophysiological evaluation (sensory and motor nerve studies and electromyography).

There was no standardized protocol for management. The modalities used included steroid therapy (prednisolone), physical therapy, artificial eye drops and protective wear to minimize local ocular injury. The patients were followed up regularly for between 1 and 55 months. The prognosis of the paralysis as related to the modality of treatment, with particular reference to steroid therapy, was not assessed. None of the patients had surgical decompression or tarsorrhaphy.

Results
During the period of the study, 123 patients (age range 18 months to 68 years) satisfied the selection criteria and formed the basis of the study. The hospital frequency of Bell’s palsy was 20.5 per year. Figure 1 shows the age and sex distribution of the cases: males (59%) were more frequent than females (41%). The frequency of the disorder increased progressively with age in both sexes to reach a peak in the third decade, decreasing thereafter. Only 15 (12%) were under 12 years old; nine of the ten patients under 10 years old were girls; 97 (79%) were Saudi nationals. The distribution of the cases according to the month of occurrence is shown in Fig. 2. The peak and lowest frequencies were in November (18 cases) and May (4) respectively: 82 cases (67%) occurred within the colder months of the year, October to March.

Single unilateral episodes occurred in 110 patients (90%), recurrent ones were seen in 11 cases, and bilateral simultaneous lesions in two. Eight of the recurrent episodes were ipsilateral; they were contralateral in one, and alternated from one side to the other in two patients. The recurrent episodes were isolated in seven cases, occurred on two separate occasions in two instances, and one patient had three separate episodes. The interval between recurrences ranged from 1 to 25 years. In the two patients with bilateral facial palsy, one was a 25-year-old woman in whom the isolated bilateral paralysis occurred without any other deficit simultaneously 4 days after delivery. The other was a 49-year-old non-insulin dependent diabetic woman who developed a right Bell’s palsy followed 3 days later by a left one. The paralyses cleared completely in both cases, and no cause was found despite extensive investigations as highlighted above.

There was no definite preponderance regarding the side of palsy: the left and right sides were affected in 62 and 59 cases respectively, and both sides were involved in two. The main features were ipsilateral periauricular pain (55%), taste impairment (33%), hearing impairment (29%), and pain or numbness of the face (18%). Facial pain which was the main complaint in three patients, persisted for months in one patient even after recovery. Diabetes mellitus was present in 10 cases (8%) and arterial hypertension in seven (6%). In three cases (2%), the onset of the disability was during the last trimester and in the immediate post-partum period in three others, including one of the bilateral cases. Two members of a family were affected on one occasion but at different periods. A preceding history of an upper respiratory tract infection was obtained in seven cases (6%), and the disability followed a bout of gastroenteritis and dental extraction in one case each. The patients were followed up for between 1 and 55 months. Of the 102 followed up for more than 3 months, 58 (57%) recovered completely, 29 (28%) had partial recovery and 15 (15%) still had severe paralysis.
Discussion
In most community and hospital-based studies, Bell’s palsy affected men and women equally.\textsuperscript{2,8,9} The male preponderance in our study was probably due to the inclusion of expatriates, the majority of whom are men. The age pattern in this series is similar to that in other reports in which the frequency plateaus after the third decade.\textsuperscript{3,8,9} The marked female preponderance in those under 10 years old is an interesting finding, and is difficult to explain. It may, however, reflect an increased clinical awareness by the patients. The high proportion of cases occurring during the ‘cold’ months of the year when outside ambient temperature is usually between 5° and 25 °C suggests probable seasonal clustering as with the study from Egypt but in contrast to the experience from Nigeria.\textsuperscript{10,11} However, the appearance of cases throughout the year is similar to the experience of other workers.\textsuperscript{2,8,10,11}

No preponderance for involvement of one side of the face was noted in our series similar to previous reports from large hospital series and community-based studies.\textsuperscript{8–10} The associated symptoms and signs such as pain behind the ear, hypogeusia or auditory changes were found in our patients with frequencies similar to those reported elsewhere.\textsuperscript{12} The presence of sensory symptoms in the territory of the ipsilateral trigeminal nerve in 18% of our patients and persistence of pain following recovery in a case is worthy of note. These findings suggest that the facial paralysis in such cases may be part of a cranial polyneuritis with associated involvement of the trigeminal, glossopharyngeal and the cochleovestibular nerves as postulated by previous authors.\textsuperscript{2,13} These symptoms are said to be ignored often.\textsuperscript{2}

The role of diabetes mellitus, hypertension, pregnancy, and family history as risk factors for Bell’s palsy has been a controversial subject.\textsuperscript{12,14} Abnormality of glucose tolerance tests has been found in 6–66% of patients with Bell’s palsy.\textsuperscript{14} Hauser and colleagues\textsuperscript{8} found the incidence rate of known hypertension to be 8% in their cases of Bell’s palsy. Adour and coworkers\textsuperscript{2} found no correlation with pregnancy contrary to the findings of Korczyn.\textsuperscript{15} Familial incidence of Bell’s palsy has been estimated to be around 3%.\textsuperscript{12} Our study does not suggest that any of these factors was clearly associated with idiopathic facial paralysis in Saudi Arabia. However, the occurrence of the paralysis mainly in late pregnancy or early postpartum in a few cases is similar to the observations in other series.\textsuperscript{8,11,15,16}

The frequency of recurrent Bell’s palsy in this study similarly conforms to the pattern in other environments although ipsilateral recurrences were more frequent that contralateral episodes.\textsuperscript{3,17} Rarity of bilateral simultaneous Bell’s palsy in our cases is in agreement with previous reports.\textsuperscript{3,18} Although only 83% of our cases were followed up for more than 3 months, the frequency of complete recovery was lower than the reported range of 65–85%.\textsuperscript{9,12} It is possible that those who defaulted within 3 months had recovered completely and therefore felt they required no further re-evaluation. Despite the strict selection criteria, patients with residual severe paralysis may represent misdiagnosis as complete recovery is commonly expected in Bell’s palsy.\textsuperscript{19,20} On the other hand, it is possible that some of them might have demonstrated clinical improvement had they been followed up for a longer period.

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References
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