

Ocular manifestations in cases of Bell's Palsy

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Abstract

Introduction: Bell's Palsy accounts for around three-quarters of all cases of unilateral acute facial weakness which is diagnosed after excluding other causes of isolated facial weakness. They often cause ocular morbidity which is annoying to the patient even though it spontaneously resolves within few months. Bell's Palsy is usually reported by otorhinologists and very less is written from ophthalmological point of view.

Objectives: To describe the ocular manifestations, complications and prognosis of Bell's Palsy in different age group.

Materials and Methods: It is a retrospective analysis of data collected of all the patients with Bell's Palsy attending the ophthalmology department from 2015 to 2016. Their demographic data along with time interval between onset of symptoms and presentations, visual acuity, signs, complications are all recorded of the first visit and subsequent follow up until complete recovery.

Conclusion: Bell's Palsy is commonly seen in young adult females. They often present within few days of onset of symptoms. Complete recovery occurs within six months though the recovery rate is faster in younger individuals. Vision threatening complications are rare.

Keywords: Bell's Palsy, Facial Palsy, Lagophthalmos.

Introduction

Bell's Palsy, named after Scottish anatomist Sir Charles Bell, is the most common cause of acute onset unilateral and isolated facial nerve weakness/paralysis leading to inability to voluntarily move facial muscles on the affected side of the face. Although typically self-limited, the facial paresis/paralysis that occurs in Bell's Palsy may cause significant temporary oral incompetence and an inability to close the eyelid, leading to potential eye injury. However, about 80% of cases show spontaneous recovery even without treatment.^(1,2) It affects all age groups, with the highest incidence in the second and third decade, without sex preference.

The temporal and zygomatic branches of facial nerve supply the forehead and eyelid muscles. Their involvement in the disease leads to paralysis of orbicularis oculi muscle resulting in absence of forehead wrinkles on the affected side, brow ptosis, lagophthalmos, decreased tear production and ectropion giving rise to a characteristic facial asymmetry. These factors along with poor Bell's phenomenon and corneal anaesthesia can lead to dry eye, infection, corneal ulceration, perforation, and even blindness. Therefore these ocular complications can be devastating both cosmetically and functionally. The initial treatment is supportive like frequent use of lubricating eye drops, taping of lids at night, use of eye shields and physiotherapy of facial muscle. Surgery is reserved for those patients who have failed nonsurgical treatment to protect the cornea and for those who have been treated effectively with conservative measures but are faced

with the prospect of long-term or permanent paralysis.⁽³⁾

Systemic administration of a seven-day course of Tab. Acyclovir 800mg 5 times a day and a tapering course of prednisone, initiated within three days of the onset of symptoms, is also recommended to reduce the time to full recovery and increase the likelihood of complete recuperation.⁽⁴⁾ The percentage of complete recovery between age 4 and 50 years varied from 83% to 74%, respectively, it tend to decrease to less than 54% at age 80.⁽⁵⁾

Bell's Palsy is often reported by Ear Nose Throat (ENT) surgeons and described from their point of view. Very few articles are written by ophthalmologist where ocular features, its complications and prognosis are explained. The sudden onset of the facial palsy in otherwise healthy patients leading to deviation of mouth and lagophthalmos causes anxiety in patients. They are worried about the visual prognosis. Therefore this article tries to focus on the ocular complications and prognosis of the disease in different age groups.

Materials and Methods

It is a retrospective study of all the patients who visited the ophthalmology clinic of Dhulikhel Hospital with ocular problems of Bell's Palsy and also the diagnosed cases of Bell's Palsy referred to us by ENT, Medicine and pediatrics departments of the same hospital. We collected data of 69 patients with Bell's Palsy from January 2015-January 2016 AD. Demography and chief complains of those patients were noted. Visual acuity, anterior segment and

posterior segment examination by slit lamp biomicroscopy were collected. Different treatment modalities like medical, physiotherapy and surgical treatment received by each patient was noted. Similar data were collected of the patients when they came for subsequent follow-ups. The data was tabulated in excel and statistical analysis done to find out the demography of the disease, its ocular features and complications, treatment received by the patient, its recovery time and impact of age on disease prognosis.

Results

There were total 69 patients with Bell's Palsy attending our OPD. Among them 32 patients (46.4%) were young adults aged 16-30 years old, followed by 12 (17.4%) aged between 31-45 years old. The rest of the age group affected are given in Table 1.

Table 1: Age distribution

Age group	No. of patients	Percentage
0-15	6	8.7
16-30	32	46.4
31-45	12	17.4
46-60	9	13
61-75	7	10.1
>75	3	4.3

Among them 60.9% were females. Almost half of them (47.8%) presented to us within first four days of the onset of symptoms whereas seven of them (8.6%) presented after one month of onset of symptoms because they had mild initial symptoms but lagophthalmos was persisting even after a month. Right and left eyes were equally involved among our cases. The most common complain of patients being unable to close the eyes in 43 patients (62.3%). The rest of the symptoms are given in Table 2.

Table 2: Symptoms at presentation

Symptoms	No. of patients (%)
Unable to close eye	43 (62.3%)
Watering	37 (53.6%)
Foreign body sensation	34 (49.3%)
Burning sensation	23 (33.3%)
Blurring of vision	21 (30.4%)
Pain	10 (14.5%)
Photophobia	4 (5.8%)
Redness	3 (4.3%)

Twenty one (30.4%) patients also complained of blurring of vision. However, 24 patients (34.8%) had best corrected vision of 6/6 in the affected eye and 20 patients (29%) had BCVA of 6/9 in the affected eye. Only six patients (8.4%) had visual acuity 6/18 and less. On examination, lagophthalmos was the most

commonly seen sign in 67 patients (97.1%) followed by conjunctival congestion in 25 (36.2%) and corneal infiltrate in 17 (24.6%) patients. Other signs are listed in Table 3.

Table 3: Signs at presentation

Signs	No. of patients (%)
Lagophthalmos	67 (97.1%)
Conjunctival congestion	25 (36.2%)
Corneal infiltrate	17 (24.6%)
Reduced blinking	13 (18.8%)
Reduced corneal sensitivity	13 (18.8%)
Poor Bell's Phenomenon	5 (7.2%)
Corneal ulcer	3 (4.3%)

Out of 69 patients, only one patient needed tarsorrhaphy for severe lagophthalmos and corneal ulcer. Rest of the patients were managed with topical lubricating eye drops, ointment, topical antibiotics for ulcer, taping of lids at night, a short course of oral steroids and a physical therapy. Among them, 23 patients (33.2%) had complete resolution within one month with three of them getting resolved in 10 days. It was followed by 15 of them (21.7%) getting completely resolved in 60 days as shown in Fig. 1. From the figure it is also obvious that younger patients recovered faster than older people. Only 3 patients (4.3%) took 150 days for completely getting rid of signs and symptoms of Bell's Palsy. The graph depicted in Fig. 2 shows that male patients recovered faster than female patients.

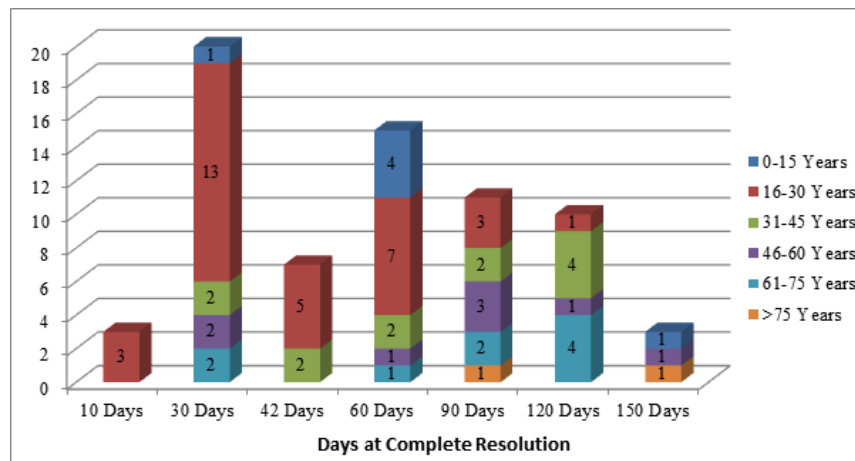


Fig. 1: Age wise distribution of recovery rate

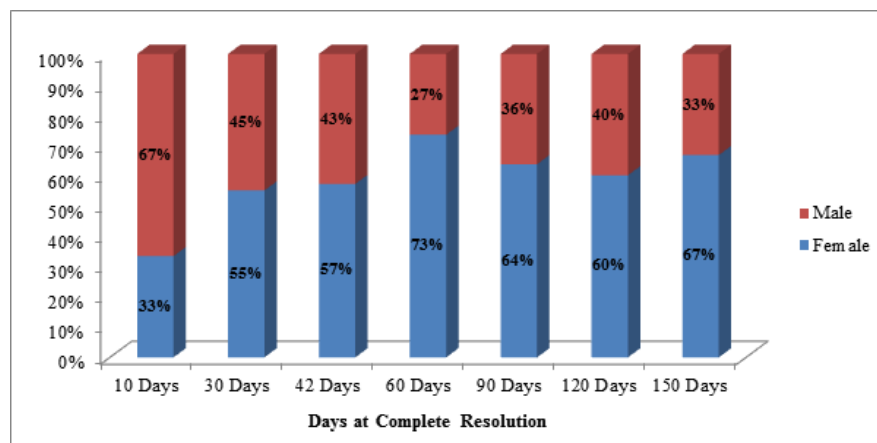


Fig. 2: Gender wise distribution of recovery rate

Discussion

Bell's palsy is the most common form of facial weakness, accounting for almost three-quarters of all cases of acute facial weakness. The diagnosis is established without difficulty after excluding other causes of unilateral isolated facial weakness.⁽⁶⁾ In our study, the commonest age group affected was between 16-30 years (46.4%), followed by 31-45 years in 17.4%. Other studies also showed similar results with peak incidence in 16 to 45 years.⁽⁷⁻¹⁰⁾ Whereas Peitersen E reported two age group peaks of disease manifestation (20-40 years old and next 70-80 years old).⁽⁴⁾ Rowhani-ahbar A et al in 2012 found noticeably higher incidence of Bell's Palsy among children ≥ 10 years of age and gave reason for such a trend to be increased cumulative exposure to microbial agents with time.⁽¹¹⁾ Regardless of age, the incidence rate was consistently higher among females than males in their study which is similar to ours where females constitute 60.9% of our patients. Konstantinos M also reported that 63.6% of their patients were women.⁽⁷⁾

Literature surveys shows on follow up about 70-85% of patients function returned within three weeks and in the remaining 15% after 3-5 months.^(3,4,7,12,13) We got similar results too where 70.8% had complete

resolution within 3 months, among them, 33.2% had resolved in one month.

While another study by Lee HY et al (2013) shows that the percentage of complete recovery between age 4 and 50 years varied from 83% to 74%, respectively, and it decreased to less than 54% at age 80 which proves that the age of the patient is an important risk factor for facial nerve recovery.⁽¹²⁾ In the same study, time for recovery did not vary much in different age groups whereas in our study as shown in Fig. 1, 16 out of 23 patients who recovered within one month fall into age group 15-30 year olds. While among 9 of our patients belonging to age group 61-75 years recovered in 3-5 months only thus proving that age is also a prognostic factor in recovery rate. This fact is also proven by Chang Il Cha et al whose study showed in the adults aged 16 - 30, 31 - 45, 46 - 60, 61 - 75, and 76 years and older, the recovery rates were 95.5% (64 of 67), 91.0% (71 of 78), 91.1% (82 of 90), 89.0% (49 of 55), and 81.8% (9 of 11), respectively.⁽⁹⁾

In our study, male patients are seen to recover faster than females as in Fig. 2 but we didn't find any literature to compare with our findings. Konstantinos M et al, after survey of various literatures as well as their own observations believe that no improvement can be

expected after 1 year, making a follow-up of 12 months necessary.⁽⁷⁾ In our study too all the patients recovered fully within 5 months. Though Bells' Palsy is a self limiting disease with only few patients having vision threatening condition like corneal ulcer (4.3% of our cases), it's annoying symptoms like deviation of mouth and unilateral lagophthalmos (62.3% of our cases) often socially stigmatizes the patients. Thus they seek early medical advice like in our cases where, almost half of them (47.8%) presented to us within first four days of the onset of symptoms.

Though 21 patients also complained of blurring of vision with 10 of them also complaining of pain, corneal ulcer was present in 3 cases only. Blurring in other cases was due to reduced blinking and dry corneas. Therefore early determination of the prognosis is important for the patient, who wants to know if complete functional recovery is to be expected and when.

Conclusion

Bell's Palsy is commonly seen in young adults aged 16-30 years old. The incidence is more in females. Almost half of them presented early in the disease within few days with lagophthalmos, watering and corneal infiltrate. Complete recovery occurs with medical management alone though recovery rate is earlier in younger than in older patients. Thus signifying that age is an important prognostic factor for faster and complete recovery. Vision threatening complications are rare in Bell's Palsy.

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