

FACIAL PALSY: A MEDICAL EMERGENCY*

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The treatment of lower motor neurone facial nerve palsy has been a matter of debate for many years. Cawthorne,¹ Kettel,² Nessel³ and most recently Jongkees⁴ have advocated surgical decompression in selected cases; Langworth and Taverner⁵ in 1963 considered it rarely indicated and, in a more recent publication, Taverner⁶ feels that advances in medical treatment should relegate surgical decompression to the realm of history. Miller⁷ is most definitely opposed to operation.

All workers, however, are agreed that whatever treatment is adopted, to be effective it must be instituted within the first few days after the onset of the palsy. Facial palsy therefore becomes a medical emergency, but because a large proportion of these cases resolve spontaneously and completely it has often been the habit in the past to adopt an expectant attitude and to refer only the occasional case that does not recover for specialist consultation and treatment.

Because the disability in those who do not recover adequately is so distressing, and because effective treatment to prevent disability is now available, the plea is earnestly made that all cases should be referred for special investigation and treatment at the earliest possible opportunity.

CLINICAL PRESENTATION

Excluding those cases clearly resulting from trauma, the great majority of facial nerve palsies of the lower motor neurone type are examples of the well-known syndrome named Bell's palsy. The causation of this condition is still a matter of debate, but the pathology is generally considered to be swelling of the nerve, most commonly in the vertical part of its intratemporal course, about 1 cm. above the styloid-mastoid foramen. Being in a bony canal, swelling leads to compression, causing at first only interruption of conduction through the axons (i.e. a physiological block or neuropraxia) but, if more severe, producing axonal degeneration and consequent denervation of the muscles supplied.

Prognosis

When a large series of such cases are reviewed it is observed that about 60% recover spontaneously and completely in a few weeks. Taverner^{8,9} found that 40% had some degree of permanent disability, but only in 10% of all cases was this severe enough to render the patient dissatisfied with the result. It has been the objective of workers in this field to devise clinical tests by which the patients destined to complete recovery may be distinguished at an early stage from those who will suffer

permanent disability. Formerly rule-of-thumb methods were employed, such as waiting a specific period of, say, 6 weeks, and then advising operative exploration if no recovery had commenced. However, since most of the damage is probably done in the first few days of the condition, the value of decompression is debatable once axonal degeneration has been produced.

Nerve Tests

It is now possible to take a more logical approach to this problem by means of tests of facial nerve function that are proving to be of definite prognostic value. By means of these tests not only can the intensity of the damage be estimated, but also the site of the lesion. The facial nerve in its course through the temporal bone gives off 3 branches, each with a specific function that can be assessed: the great petrosal nerve whose integrity can be estimated by lacrimal gland secretion tests; the nerve to the stapedius muscle, the function of which can be studied by changes in acoustic impedance as a reflex to sound in the opposite ear; and the chorda tympani whose involvement can most simply be studied by changes in taste sensation in the anterior two-thirds of the tongue. By means of tests such as these the nerve can be divided into 4 regions and the lesion located. As has already been mentioned, the commonest site of the swelling in Bell's palsy is in the part of the nerve from which the chorda tympani arises, so that taste disturbances are frequent and are believed to be the earliest sign of impending severe damage to the facial nerve, even preceding the onset of the paralysis of the facial muscles.

After section of a nerve the distal portion maintains its electrical excitability for 48-72 hours. Then the axis cylinders fragment, with abolition of excitability and conduction. Consequently, electrical tests may give us clear evidence of axonal degeneration only after the severe process has continued for 3 days. Ideally, decompression of the nerve—if indeed it should ever be done—should be undertaken as an emergency the moment axonal degeneration is threatened, but at present the best that can be achieved is to undertake it 3 or more days later on the basis of electrical tests of nerve function.

Changes of taste sensation due to involvement of the chorda tympani nerve hold out the promise of even earlier diagnosis of the severe case.¹¹ By electrogustometry a quantitative estimate of taste function can be obtained in many patients by comparing the normal and affected side. By a study of the subsequent course of cases showing taste changes, it is hoped that the claims for the reliability of this test as a prognostic guide may be further established. Blatt¹² has used submandibular salivary

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secretion as another method of estimating chorda tympani involvement and he finds it a valuable prognostic sign.

TREATMENT

ACTH Gel

From the work of Taverner and his associates¹³ the ability of ACTH gel given early in the disease to reduce the percentage of patients going on to permanent disability has been strikingly demonstrated. He treats all patients in whom electrogustometry gives evidence of impending denervation by a course of ACTH lasting 9 days. For the first 5 days a full dose of 80 units per day is given, and on the subsequent days the patient receives a progressively reduced dose. A large number of cases of Bell's palsy are referred to our departments too late for ACTH to be effective.

Routine Management

The following procedure is therefore advocated in every case of Bell's palsy:

If seen within 7 days of onset, the patient should be informed that although the majority of cases recover spontaneously, there is a 10% risk of severe disability unless treatment is undertaken. The patient should be referred as an emergency to an otologist or to a hospital with departments of otolaryngology and physical medicine which are equipped to undertake the investigations previously described.

The ACTH course outlined above should be commenced at once and the consultant informed of what has already been given. If ACTH is considered not to be required it can be discontinued with no loss.

If seen later than 7 days after onset, the patient must be referred to an otologist as soon as possible. At the hospital the following procedure will be adopted: Otoscopy will be done to exclude other causes of palsy. The first case reported below underlines the importance of this. Tests will be done to localize the site of the lesion, to establish its severity and to detect early axonal degeneration, and ACTH will normally be continued. Decompression may be considered in exceptional cases.

Physiotherapy may be advised in certain cases, mainly as an encouragement to the patient rather than as an effective measure. Controlled series have proved that it does not assist recovery.¹⁰ At this hospital interrupted direct current stimulation of the affected muscles is not prescribed as a routine. Patients are taught, seated before a mirror, to give passive movements to the affected muscle groups in synchrony with the same active movements of the contralateral unaffected muscle group.

CASE REPORTS

Case 1

A male adult had developed complete right facial palsy one year previously. His family doctor had assured him it would recover spontaneously. He had physiotherapy for a time, with no benefit. Examination showed chronic otitis media with cholesteatoma formation which was considered to be the cause of his palsy.

At operation a large cholesteatoma was found in the middle ear, aditus and antrum, which had exposed and damaged the facial nerve over a distance of more than 1 cm. This case illustrates that a favourable prognosis

cannot be given in all patients and that otoscopy is mandatory in every instance to exclude chronic ear disease.

Case 2

Right facial palsy in a woman of 44 years was preceded by taste changes 24 hours earlier. She was given ACTH 24 hours after onset. Electric tests showed mainly axonal compression, but there was some evidence of denervation. Recovery progressed steadily, starting 2 weeks after onset, and 5 months later function was 80%. Some regenerating axons had grown down to the wrong muscle, so that associated movements of the eye and mouth occurred, but they did not present a serious disability.

In this case early taste changes correctly forecast some axonal degeneration, but early treatment with ACTH may have reduced the subsequent defect.

RESULTS OF TREATMENT

To date, 23 early cases of Bell's palsy have been treated by ACTH in our departments at Groote Schuur Hospital.

In one case the injections were discontinued as the patient complained of giddiness and fainting after each dose. For this reason, and because axonal degeneration was already established when first seen, this case is excluded from the survey.

Of the remaining 22 cases, 18 made a complete recovery. One patient had suffered 5 previous attacks of Bell's palsy, did not respond to ACTH and developed axonal degeneration. One had a lesion proximal to the geniculate ganglion and did not respond. In one the ACTH, although given early, failed to prevent axonal degeneration. One patient had subjective taste changes before the onset of the palsy and suffered partial axonal degeneration, but recovered 80% of full function after 5 months.

This series is as yet too small for accurate statistical evaluation, but as more early cases are treated it is hoped that Taverner's favourable results may be duplicated.

In a recent communication Taverner¹³ states that in his earlier series of cases an initial dose of 80 units ACTH was advocated to ensure that his patients were fully treated. He has now reduced his initial dose to 60 units and feels that it might be found that 40 units would in fact be adequate.

SUMMARY

The work of Taverner and his associates has shown that the administration of ACTH gel early after the onset of Bell's palsy produces a significant improvement in the prognosis. In view of this the plea is made for regarding this condition as a medical emergency requiring urgent investigation and treatment.

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