

The blood irradiation dose for complete treatment of the disease was estimated from the nomogram in 802 patients previously treated with ¹³¹I. The mean dose was 16.6 rads, but in some patients receiving multiple treatments it was much greater, ranging up to 160 rads. The bone-marrow dose is estimated as 80% of the blood dose.

Consideration of these results suggests that the risk of leukaemogenesis is slight and does not contraindicate ¹³¹I therapy of thyrotoxicosis. Nevertheless it is important to record all cases of leukaemia occurring after ¹³¹I therapy so that the validity of these conclusions may be examined.

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PROGNOSIS IN BELL'S PALSY

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The rate of complete recovery in Bell's palsy is often stated to be 80–85%, without further support, even by authors whose own results by no means approach this level (Cawthorne and Haynes, 1956; Sullivan and Smith, 1959; Dalton, 1960). Patients referred to hospital must always be selected, and it seems to have been accepted that the lack of agreement between the observed recovery rates and the orthodox 80% is due to many palsies resolving so quickly that the patients are never referred to hospital or, perhaps, never even seen by a doctor. This difficulty can never be fully overcome, but if the assumption is correct the earlier the patients are seen the better the rate of recovery should be. This is obviously true with patients specifically referred because of delayed recovery, but it is of some importance to establish the prognosis in cases seen within a few days of the onset.

To be effective any treatment must prevent degeneration of the nerve, and it is probable that this could be achieved only very early in the course of the palsy. Unless the natural prognosis of patients seen at this stage is known it is not possible to assess the results. It is claimed that treatment can be effective within the first week (Korkis, 1961), but no satisfactory control series exists for patients first observed within the same period. An attempt was made to obtain a relatively unselected group of patients by an appeal to local practitioners to refer patients early, and this paper is an account of the results.

Method

For the purpose of the present investigation Bell's palsy was defined as a unilateral facial palsy of peripheral type unassociated with other evidence of nervous disease or with otitis media or other discoverable cause. Patients with herpes zoster at the time of the palsy or later were included. The time of onset was dated from when the patient first noticed weakness and not from any premonitory symptoms. A careful examination was carried out to determine whether the palsy was complete or partial, those cases with any detectable movement being classified as partial. Electromyography was not available until late in the series, and as the results are not comprehensive they are not mentioned further. The patients did not go entirely untreated, the great majority being given nicotinic acid by mouth. Galvanism was used occasionally when recovery was delayed and the patient anxious. The patients' progress was observed at intervals, and in most of them the final result was noted.

The results were assessed as complete recovery or in three grades of partial recovery, no instance of persistent complete paralysis being seen. Recovery was defined as complete restoration of voluntary movement without any evidence of faulty reinnervation or contracture. The grades of incomplete recovery were defined as follows:

1. *Incomplete Recovery with No Disability*.—These patients stated that the face was normal, but residual signs could be detected in the form of associated movements. This is a small but important group vitiating the results of studies based on a postal questionnaire (James and Russell, 1951).

2. *Incomplete Recovery with Slight Disability.*—These patients were aware of faulty movement or asymmetry, but the disability was trivial.

3. *Poor Result.*—These patients had marked asymmetry from residual paresis, contracture, and associated movements.

This grading is arbitrary, but there was little difficulty in assessing the results. It was not possible to obtain sufficient accurate data on the time taken for recovery, and the assessment was made entirely on the final result.

Results

The series comprises 155 consecutive patients with 156 Bell's palsies, one patient being seen in two attacks. For the sake of simplicity they will be regarded as 156 cases. Eight patients were untraced and three were excluded as they were seen long after the condition had become static. 153 patients were seen within three months of the onset, 125 within 14 days, 75 within 6 days, and 22 within 2 days.

The results are shown in Table I. The three groups of patients seen within 2, 6, and 14 days have observed recovery rates of 73%, 60%, and 54% respectively. By excluding patients with herpes zoster, which carries a bad prognosis, and assuming that all those not traced recovered completely, the recovery rates in these three groups can be manipulated to 85%, 68%, and 63% respectively, but this is the only way in which the traditional 85% recovery can be extracted from these figures. The descending values of recovery rates as the patients were seen at longer intervals from the onset appear to show the effect of selection, but the figures are not statistically significant.

The prognostic importance of whether the palsy was complete when first seen is shown in Table II, the partial palsy having a prognosis in all groups that is significantly better statistically ($P < 0.001$ in those seen within 14 days). Including those originally complete, 61 out of 72 (85%) of those observed to be partial within 14 days of the onset made a complete recovery.

The effect of selection is clearly shown in the type of palsy seen at different intervals from the onset. Of those seen within six days of the onset 51 out of 75 (68%) were complete palsies. Of those seen 7 to 14 days from the onset, only 20 out of 50 (40%) were complete, the difference being significant ($P < 0.01$). Of the 49 complete palsies seen in the first six days in whom the final result was observed 23 (47%) recovered, while of those seen 7 to 14 days from the onset 2 out of 19 (10.5%) recovered. The difference is significant ($P < 0.01$). The explanation is almost certainly that many palsies that are complete in the first six days become partial in the second week as recovery begins. An additional feature of selection was that of the 11 palsies clinically complete when first seen more than 14 days from the onset none recovered completely.

The prognosis in partial palsies also showed the effect of selection within the first two weeks. Of the 22 partial palsies seen within six days of the onset in whom the result was known all recovered completely, while of those first seen in the second week only 21 out of 28 (75%) recovered. It is probable that a palsy seen to be partial in the first six days has always been partial, while of those seen later an increasing proportion have been originally complete with a potentially worse prognosis.

Age.—The age distribution and prognosis of the 118 cases seen within 14 days in whom the result was

observed are shown in Table III. Up to the age of 40 there was a 68.7% recovery rate compared with 44.4% recovery above this age, the difference being significant ($P < 0.01$).

Onset of Recovery.—It can be seen from Table IV that in every palsy that recovered completely movement was observed less than four weeks from the onset, and that the longer the first observed movement was delayed the worse the grading of the final result. The early return of movement is not, however, an absolutely good prognostic sign, and may be followed by a grade 3 recovery.

Herpes.—Herpes zoster was observed in nine patients, eight with a complete palsy. Only one recovered completely—the patient with a partial palsy. In two patients the result was grade 2 and in six grade 3. The numbers are small, but the observed prognosis was certainly bad.

Recurrent Palsy.—Of the whole series of 156 palsies, 11 were second attacks. The final result in one was not observed, and only two of the others recovered completely. The figures are too small for statistical purposes.

TABLE I.—*Prognosis According to Time from Onset when First Observed*

	Time from Onset when First Seen			
	Up to 2 days	Up to 6 days	Up to 14 days	Up to 3 months
	No.	No.	No.	No.
Complete recovery ..	16 (73%)	45 (60%)	68 (54%)	74 (48%)
Incomplete recovery:				
Grade 1	1	3	6	7
" 2	1	11	23	33
" 3	3	12	21	31
Not traced	1	4	7	8
Total ..	22	75	125	153

TABLE II.—*Prognosis According to Type of Palsy, Partial (P) or Complete (C)*

	Time from Onset when First Seen							
	Up to 2 days		Up to 6 days		Up to 14 days		Up to 3 months	
	P	C	P	C	P	C	P	C
Complete recovery ..	10	6	22	23	43	25	49	25
Incomplete recovery:								
Grade 1	0	1	0	3	2	4	3	4
Grade 2	0	1	0	11	4	19	11	22
Grade 3	0	3	0	12	1	20	3	28
Not traced	1	0	2	2	4	3	5	3
Total ..	11	11	24	51	54	71	71	82

TABLE III.—*Prognosis in Age-groups of Patients Seen Within 14 Days in Whom the Result was Observed*

# Age Group	Complete Recovery	Incomplete Recovery
0-10 years	0	1
11-20 "	14	2
21-30 "	12	8
31-40 "	18	9
41-50 "	10	8
51-60 "	8	11
61-70 "	5	8
71-80 "	1	3

TABLE IV.—*Prognosis According to Time of Onset of Recovery*

Movement Observed	Complete Recovery	Grade 1	Grade 2	Grade 3	Total
<4 weeks ..	74	6	18	4	102
4-8 " ..	0	1	10	7	18
8-12 " ..	0	0	4	7	11
12 or more weeks	0	0	1	13	14
Total ..	74	7	33	31	145

Pain.—An attempt at assessing the prognostic importance of initial pain had to be abandoned owing to difficulties in estimating degrees of pain, often in retrospect.

Decompression.—Decompression of the facial nerve in the temporal bone was carried out at my request by Mr. R. L. Flett in five patients in whom no movement had been observed after 12 weeks. No dramatic results were observed, and the final result in all was assessed as grade 3. In six comparable patients who were not operated on the results were very similar, five being assessed as grade 3 and one as grade 2. Obviously, no conclusions on the efficacy of this form of treatment can be drawn on these few patients operated on so late in the course of the palsy.

Discussion

The value of a purely clinical study of Bell's palsy may be doubted. Electrodiagnosis can, of course, provide much information, but unless the techniques described by Gilliatt and Taylor (1959) can be developed, this information is of little assistance in the main problem of treatment. The prognosis depends on the existence and degree of denervation (Taverner, 1955), and this is probably determined within at most a few days of the onset at a time when electromyography can only establish the degree of paralysis. The clinical assessment of the completeness of the palsy is obviously open to error, but it is also not possible to do more than sample the facial muscles with an electromyography needle. Two out of three patients seen within six days of the onset will recover completely, and, in this series, a partial palsy within this period implied an absolutely good prognosis. This presumably would not apply to patients seen while the palsy was still advancing. Only one patient was seen in whom the palsy was incomplete two hours after the first symptoms and later became complete, but unfortunately this patient could not be traced. A partial palsy after the first six days does not necessarily imply full recovery.

The relatively bad prognostic significance of advancing years, a complete palsy, and herpes zoster has been confirmed (Taverner, 1955, 1959), and suggestive evidence has been obtained that recurrent palsy may also be unfavourable. The only absolutely bad prognostic sign was found to be failure of return of any movement after four weeks.

The main purpose of the investigation was to establish the prognosis in early cases. The recovery rate in patients seen within six days was unexpectedly poor, as even assuming that those not traced recovered, it was no higher than 65%, or, excluding herpes zoster as well, 68%. The traditional 85% could be reached only by the most favourable interpretation of the small group seen within the first two days. The results show some effect of selection within the first two weeks, as a complete palsy in the second week has a significantly worse chance of recovery than a similar palsy observed in the first week. No conclusive evidence of the effects of selection within the first week could be obtained.

Most forms of treatment advocated for Bell's palsy are not based on satisfactory evidence. The present investigation underlines the need for a more scientific approach. A control series of "early" cases is not enough, and the comparison of patients treated on the day of onset with untreated patients first seen within two weeks of the onset, however statistically significant, is

not clinically valid. Control series in the assessment of any treatment must be matched for age, degree of paralysis, and interval since the onset within quite narrow limits.

Summary

The prognosis for complete recovery from Bell's palsy seen within six days of the onset was found to be no higher than 65%. The relatively bad prognostic significance of advancing years, a complete palsy, and herpes zoster was confirmed. The effect of selection on the prognosis is discussed, and the necessity for precisely matched control series in the assessment of treatment is emphasized.

I thank all those practitioners who referred patients with Bell's palsy and also Mr. R. L. Flett for his help with some of those in whom recovery was delayed.

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Medical Memoranda

A Condition Resembling Severe Pre-eclampsia Occurring Under Anaesthesia and Associated with Scoline Apnoea

The following case is reported in an endeavour to obtain help in the explanation of the clinical syndrome and as a record in the event of a further case report. The patient presented two interesting features—a scoline-induced apnoea due to a low serum pseudocholinesterase and severe hypertension and conjunctival oedema which could not be accurately accounted for.

CASE REPORT

A woman aged 38 attended Queen Charlotte's Hospital for her fourth pregnancy. Two of the pregnancies had resulted in spontaneous complete abortion and one pregnancy had resulted in a live birth after the spontaneous onset of premature labour. The weight of the patient at the start of the fourth pregnancy was 186 lb. (84.4 kg.), and the total subsequent gain in weight in this pregnancy was 34 lb. (15.4 kg.). The blood-pressure never exceeded 130/80 mm. Hg, and there was no proteinuria during the antenatal period; the ankles were slightly oedematous from the 28th week of gestation.

The patient was admitted to hospital at the 35th week of pregnancy with ruptured membranes, an oblique foetal lie, prolapse of the umbilical cord, and a normal foetal heart rate. The blood-pressure was 140/85, there was slight ankle oedema, and no protein in the urine. An emergency lower-segment caesarean section was performed and an infant which cried within one minute delivered.

The anaesthesia was begun by intravenous injection of atropine 1/100 gr. (0.65 mg.), thiopentone 250 mg., and scoline 75 mg., followed by endotracheal intubation. Anaesthesia was maintained by nitrous oxide and oxygen, 5 and 2 litres/minute respectively, through a circle absorber, with intermittent doses of scoline amounting to a total dose