

86. EFFECT OF COMBINED THERAPY OF LASER IRRADIATION, STELLATE GANGLION BLOCK AND HYPERBARIC OXYGENATION THERAPY FOR CHRONIC FACIAL PALSY

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Background and Purpose: Prognosis of acute facial palsy is thought to be comparatively well, and its therapy is conservative including medication, stellate ganglion block (SGB), laser irradiation (LI). The main aim of the therapy is to promote improvement of microcirculation. Chronic facial palsy, however, is rather intractable. The therapy of chronic facial palsy is not known well yet, and then electrical stimulation, reconstruction surgery and rehabilitation are recommended. SGB is a common technique in the pain clinic and recognized to improve microcirculation in the blocked side. Similarly, the effect of LI is to improve peripheral blood flow and is reported to facilitate a remodeling of injured nerve. Hyperbaric oxygenation therapy (HBO) is accepted to ameliorate tissue oxygenation. We evaluated the efficacy of the combined therapy of LI, SGB and HBO for chronic facial palsy.

Patients and Methods: After Institutional approval and informed consent, 4 patients aged between 18 and 71 y. o. who had been facial palsy over a year were studied. They received LI, SGB and HBO. Inpatients received LI in the morning, and SGB and HBO in the afternoon, and an outpatient received LI, SGB and HBO in the afternoon. For the LI, a diode laser system, an output power of 1000 mW and a wave length of 830 nm in continuous wave, was used in the contact technique near stellate ganglion for 3 min, a 150 mW diode laser on the affected face for 5 min. SGB was conducted by well-experienced anesthesiologists, using an injection of 1 % lidocaine 6 ml. After block, patients entered in hyperbaric oxygen tank (the KHO-301B Kawasaki Engineering, Kobe, Japan) with 2 atm for 60 min. The degree of palsy was evaluated before and after the therapy by using the Japanese Grading System (Figure 1).

Results: Table 1 shows patients' characteristics. Figures 2 and 3 show the time course in changes of the palsy grades. This therapy was thought to be effective for 3 adult patients.

Conclusion: The combined therapy of LI, SGB and HBO is thought to be effective for chronic facial palsy. We think that if this therapy is well accepted, patients can receive less invasive treatments for chronic facial palsy.

SCALE FOR ASSESSMENT OF FACIAL PALSY
(Normal score = 40 points)

	almost normal	slight palsy	high palsy		almost normal	slight palsy	high palsy
Facial Symmetry	4	2	0	Close Alternate Eyes	4	2	0
Raise Eyebrows	4	2	0	Move (Dilate) Nostrils	4	2	0
Blink Eyes	4	2	0	Grin, Showing Teeth	4	2	0
Close Eyes Lightly	4	2	0	Whistle	4	2	0
Close Eyes Firmly	4	2	0	Pull Down Corners of Mouth	4	2	0

Figure 1. The Japanese Grading System: Three grade evaluation scale of paralysis in facial palsy patients, compiled by the Facial Nerve Research of Japan

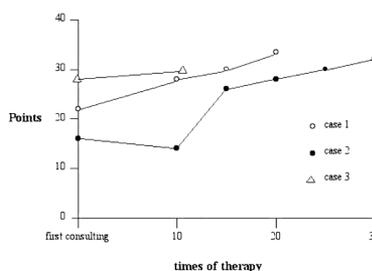


Figure 2. The time course in changes of the palsy grades of case 1, 2 and 3

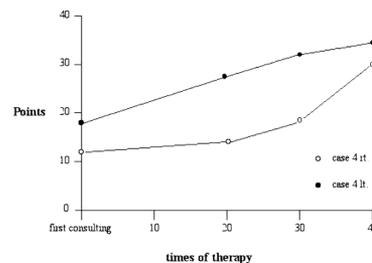


Figure 3. The time course in changes of the palsy grades of case 4

Characteristics of patients

case	gender	age	side	duration of palsy	grade at first	grade at last	times of therapy
1	F	56	lt.	3 y.	22/40	36/40	20
2	F	71	lt.	13 y.	16/40	32/40	30
3	F	18	lt.	15 y.	28/40	30/40	11
4	M	43	bil.	rt. 6 y.: lt. 1 y.	12: 18/40	30: 34/40	40