Are Reinnervation MUPs Encouraging Factor for Good Rehabilitation Outcomes: Facial Nerve Lesion Due to Face Lifting Surgery

Yüz Gerdirme Cerrahisine Bağlı Fasiyal Sinir Lezyonunda Reinnervasyon MÜP'lerinin Rehabilitasyon Açısından Önemi

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To the editor,

A 40 year-old woman who had undergone face lifting surgery 4 weeks ago and occasionally had frontal paralysis applied to our out-patient clinic of physical medicine and rehabilitation (PMR) department, although her surgeon did not refer or advise. After the detailed physical examination and electroneuromyography (ENMG), she was diagnosed as the injury of the temporal branch of facial nerve. There was no movement at the frontal region muscles with the full effort (Figure 1a) but in ENMG study there were very rare motor unit potentials (MUPs). Also these MUPs were prominently polyphasic and interpreted as reinnervation MUPs which were accepted as a good prognostic criterion for the nerve regeneration.

Firstly, the patient was instructed and educated about facial mimicking exercises and followed up for the next two weeks. At the end of the two weeks, there was no improvement. Then, a comprehensive PMR program which contains low level laser therapy (LLLT), electro-stimulation (ES) and instructed mirror feedback facial exercises was planned as a session per day for every weekdays. At the first week of the therapy visually seen frontal muscle movements were gained, and the therapy was continued for the next four weeks (a total of 21 sessions of physical therapy). During the rehabilitation program, the frontal muscle movements were improved gradually and it was finalized when it reached to a satisfactory level (Figure 1b) with advises for the continuing to the exercises. There were no asymmetry and weakness according to intact side at 3rd month control examination (Figure 1c).

The reason we report our patient was to take attentions to the role of PMR in recovery of the peripheral nerve injuries and to highlight the prognostic value of the electrophysiological signs for rehabilitation outcomes. Nerve injury was a probable complication of

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near nerve surgical procedures (1). Still there was no consensus about; when and how to treat the nerve injury. In this present case, there were reinnervation MUPs and very rare MUPs with no visually seen movement at the affected muscles and comprehensive rehabilitation program which consist exercise, ES and LLLT were used for the treatment. The evidence about the role of these PMR methods on nerve injury management was still insufficient and controversial. Also, the relationship between the ENMG signs and rehabilitation outcomes were still scarce. However, the evidence for the effectiveness of the LLLT and ES nerve injury treatment increasing gradually (2,3). The exact action mechanisms of LLLT are still unknown, although some proposed physiological effects include acceleration of collagen synthesis, increases in vascularization, reduction of pain, and anti-inflammatory action (4). Furthermore, it is easing factor for the usage of these modalities that there was no proven or exactly known complication in the proposed ranges. Reinnervation MUPs were generally accepted as a good prognostic factor for nerve healing, but its integration to the rehabilitation practice as a prognostic criterion is still not established exactly.

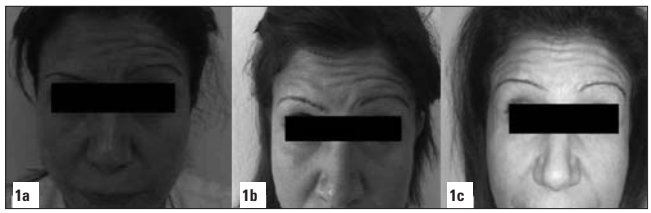

Figure 1. (a) before the therapy, (b) end of the comprehensive rehabilitation program, (c) after 3 months.

The result of this case report encouraged us to use reinnervation MUPs as a good prognostic factor and as an evidence for the time to begin comprehensive rehabilitation program. Additionally, it was difficult to generalize the single case to the whole, but it would not be a surprising interpretation that other clinical disciplines did not know enough about the capabilities of PMR or we could not familiarize ourselves sufficiently (5). It might be also a reason of this situation that the standards of nerve injury rehabilitation still not well established, but nobody was responsible for this duty other than PMR specialists. Which one is logic: (a) to wait to for spontaneous recovery for indefinite time or to begin rehabilitation with all capabilities as soon as possible and (b) to wait for others to instruct to us about what to do or to establish the guidelines of our responsibilities and proud with its working?

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