SCIENCE & PRACTICE · CLINICAL CASE

Neuropathic pain from section of the inferior alveolar nerve following implant placement

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Introduction

The case of a 74-year-old woman with a complicated picture of chronic neuropathic pain secondary to a dental implant is presented. Both because of the patient's age and this type of pain, the prognosis is quite guarded, since the literature and clinical experience show that it tends to become chronic and is difficult to resolve, with results that leave much to be desired. New approach techniques are needed to solve this class of pain and achieve an effective response for these patients. One therapeutic alternative could be the neurofunctional recovery of the patient together with non-ablative zonal radiofrequency, also called diathermy or tecar.

Keywords: *neuropathic pain, complication, implant, neurofunctional recovery, non-ablative radiofrequency.*

Case description

The patient came to the clinic seeking a second opinion. General data: 74-year-old woman; postmenopausal; body mass index 20; resection of the internal meniscus of the left knee; non-Hodgkin lymphoma in 2013, for which she received radiotherapy and chemotherapy; restless-legs syndrome; insomnia; and phlebitis and thrombophlebitis of superficial vessels.

Dental history: several implants were placed at another dental clinic, including those in areas 34 and 36 (surgery on 9 May 2016). The patient began to complain of intense pain from the first day, which did not subside with medication. The osseointegrated implant at position 36 was removed on the seventh postoperative day due to intense pain following section of the inferior alveolar nerve. The implant at 34 showed no signs of infection and no mobility. A dental CBCT scan performed in September 2016 ruled out compressive pathology in the dental-nerve canal. The patient consulted several specialists without result before a previously programmed ablative radiofrequency of the mental nerve (April 2017) also failed to change pain intensity.

Assessment

The Visual Analogue Scale (VAS) score was 10, with a 70% deterioration on the Quality of Life (QoL) scale. The patient presented allodynia in the territory innervated by the left dental nerve, accompanied by paraesthesia in the periorbicular region of the lips. Surface electromyography of the masticatory muscles showed a markedly elevated baseline (around 30.7 μV) with an irritative pattern, consistent with the spontaneous-pain picture reported by the patient.

Clinical management

The patient was considered suitable for palliative neurofunctional treatment with non-ablative radiofrequency, using the C-500 Intraoral Capenergy dental medical device. Because the treatment is palliative, it seeks to control pain and improve quality of life. Daily stimulating massage therapy with ice for five minutes, and muscular and functional reinforcement exercises — oral, lingual and laryngeal — three times a day were prescribed, together with respiratory and verbal-execution exercises. Three sessions of non-ablative radiofrequency were indicated. The prescribed emission is high-frequency sinusoidal with absorption maximised at 1 MHz, with a thermal sensor controlled at 39 °C on the primary intraoral emitter (capacitive). The extraoral emitter was applied over the innervation zone of the left dental nerve and the periorbicular area, for seven minutes externally and five

minutes intraorally.

Results

Pain control was effective from the first radiofrequency session, obtaining a VAS of 0 from the outset, a result maintained throughout the remaining sessions and over the following six months. Quality of life improved by one hundred per cent: the patient can now sleep through the night, and can eat, drink and speak without discomfort or pain. Verbal function is practically normal; only partial edentulism prevents optimal pronunciation of some syllables. Surface electromyography at the end of treatment showed normalisation of the baseline. The patient rated the result ten out of ten; the clinical rating was 9.5. Only slight hypoaesthesia remained in a small area of the left lower lip, which is neither bothersome nor interferes with basic daily activities. Her mood was good and the depression had resolved.

Conclusion

Oral neurofunctional recovery and non-ablative radiofrequency appear to be a good alternative for the treatment of patients with neuropathic pain secondary to placement of dental implants. Nevertheless, more studies and case series will be needed to adequately protocolise the treatments.

Reference

Molinos JR, Molinos A, Castillo M. Neuropathic pain from section of the inferior alveolar nerve following implant placement. Maxillaris. 2018;217:142-149.