Reviewer’s report

Title: Efficacy of low level laser therapy on neurosensory recovery in the inferior alveolar nerve: Report of 4 cases

Version: 1 Date: 5 December 2005

Reviewer: Michael Miloro

Reviewer’s report:


Confidential Comments

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Major Compulsory Revisions

The abstract should be organized into a standard format, for example: purpose, materials and methods, results, and conclusions.
In the abstract section, “pharmacologic therapy’ should be included as a treatment option.
The ‘background’ section should be retitled “introduction.” In this section, the authors mention several ‘modalities’ for nerve repair, but fail to discuss their limitations and why these methods are not acceptable.
Since the authors describe only 4 cases of nerve injury lasting greater than one year, they should consider a discussion of the work of Haanes, et.al. regarding long-standing sensory aberrations of the trigeminal nerve and the mechanoreceptive responses that were achieved with LLL.
All 4 cases involved female patients and this must be discussed in light of current literature that suggests that female rats and humans are less likely to undergo spontaneous neurosensory recovery following nerve injury than are male subjects.
Additionally, all 4 cases involved the IAN, with no lingual nerve involvement, and all as a result of third molar odontectomy. Is it possible that a mandibular block injury may be responsible for the paresthesia or dysesthesia in one or more of these cases? The specific local anesthetic agent and amount used, as well as the technique of mandibular block anesthesia should be described for each case.
In each Case Presentation, more information about each patient is warranted. The specific Sunderland, preferably, or Seddon, classification should be assigned according to Zuniga, et.al., J Oral Maxillofac Surg 1998. Also, a clear distinction must be made between those patients who experience paresthesia, with hypoesthesia, vs. those patients that experience ‘dysesthesia,’ or painful or unpleasant sensory aberrations of the IAN or lingual nerves. How often were these patients followed and until what maximum time period? What is the follow-up period mean time and range?
Following the Case Reports, a section should be devoted to “Materials and Methods.” A brief, but complete description of the LLL treatment regimen should be provided, and not merely a reference to the protocol in the literature. Is the wavelength 632 nm? How many surgeons performed the 3rd molar removals? What was the specific technique? How many investigators applied the LLL treatments and were they done consistently? How often were the LLL treatments performed?
After the “Materials and Methods” section, a “Results” section should begin near the top of page 8. The Results must have been evaluated statistically, even though the number of patients is small. It is difficult (or impossible) to determine statistical power based upon 4 patients. Most other studies using LLL for sensory aberrations of the trigeminal nerve report improvement in one or more parameters of clinical testing, but not to 100%. The authors should discuss their findings in light of other published studies using LLL which do not show a 100% improvement in patients with trigeminal injuries greater than one year. The results for EACH patient should be presented since there are only 4 patients. The authors may wish to consider delaying publication until patient accrual is increased.

In the “Discussion” section the authors discuss possible mechanisms for IAN injury during third molar surgery, but fail to present their personal theories. Also, they fail to address the issue of mandibular block injury as a potential etiologic factor. A portion of the “Discussion” section is a mere repetition of the “Background” or “Introduction” section, and should be deleted.

The “Conclusion” section must be expanded to include a rationale for the use of the LLL in these cases of long-standing trigeminal nerve injury, due to the lack of significant surgical effect or pharmacologic effect.

Figure 1 is unnecessary since most surgeons understand the radiographic risk factors, but this decision should be made by the Editor, depending upon space available.

Figure 2 must show ALL of the sites treated by the LLL, both extraorally and intraorally.

Figure 3 needs further explanation in the body of the manuscript. Is “time 0 days” the start of LLL treatment or the end of LLL treatment? In other words, is the x-axis (‘days’), the days following LLL treatment or during LLL treatment? Most significantly in this Figure 3, Case #2, who was 21 months following injury (the longest time period) had the most rapid response to near normal values than did the other patients. The authors should discuss their theory for this interesting finding.

Figures 4 and 5 are appropriate, and perhaps should be discussed further in the body of the manuscript.

**What next?**: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest**: An article whose findings are important to those with closely related research interests

**Quality of written English**: Needs some language corrections before being published

**Declaration of competing interests**: I declare that I have no competing interests.