Photobiomodulation Therapy in Preventing Osteoradionecrosis of the Jaws: A Case Report

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Abstract

Objective

To apply photobiomodulation therapy (PBMT) for prevention of osteoradionecrosis of the jaws (ORNJ)

Methods

Inform consent

Purposive sampling per dental treatment plan and patient preference

Evaluation of mucosal microcirculation using Laser Dropper Flowmetry (LDF)

PBMT regimen

635nm at 100mW/4J/cm² CW/20 sec per point with 8-mm laser probe

Objective sampling per eruption site

Assessment by clinical and radiographic examination

Data analysis by the concept of n-of-1 design

Results

The percentage of increase in mucosal microcirculation

Completion of epithelialization was observed within 3 to 4 weeks without clinical complications. There was no incidence of ORNJ in this patient during 2-year follow-up period.

Conclusion

This PBMT regimen could prevent ORNJ after extraction by increasing mucosal microcirculation immediate after therapy and promoting epithelization. These were repeated with favorable results in the patient undertaken 5 episodes of 8-tooth extractions.