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[\[PDF \(971K\)\]](#) [\[References\]](#)**XPS analysis of the dentin irradiated by Er:YAG laser**

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Abstract:

The aim of this study was to investigate the effect of Er:YAG laser irradiation on human dentin surface using X-ray photoelectron spectroscopy (XPS). 10 human dentin disks were prepared from extracted human molars for XPS analysis. These specimens were divided into two groups of five: a control group and group that were irradiated by an Er:YAG laser beam (100 mJ, 1Hz). All specimens were analyzed by XPS over a wide scanning range and narrow scanning ranges. The Ca/P ratio was calculated from the XPS results.

In the results, the binding energies of Ca, P, and N in the laser-irradiated group were higher than those in the control group. The Ca/P ratio of the Er:YAG laser irradiated group (1.24±0.05) was significantly lower than that of the control group (1.52±0.16).

This study showed that Er:YAG laser irradiation decreased Ca/P ratio and denatured the collagen of human dentin.

Key words:

[XPS](#), [Dentin](#), [Er:YAG laser](#)

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