PC-I-15. Crestal bone changes around dental implants : a retrospective radiographic evaluation in humans comparing same implant design with internal and external implant/abutment connection

Eun-Jeong Lee*, Tae-Il Kim, Yang-Jo Seol, Yong-Moo Lee, Young Ku, Chong-Pyoung Chung, Soo-Boo Han, In-Chul Rhyu
Department of Periodontology, School of Dentistry, Seoul National University, Seoul, Korea.

Background

The aim of this study was to compare changes in the marginal bone level with same implant macro-design but different implant/abutment connection system(internal/external). The implants used in this experiment had microthreads in its neck portion and are available in two types, external and internal abutment/fixture connections.

Materials and methods

A total number of 51 implants were initially inserted in 29 patients. Serial x-rays were taken at baseline (fixture installation), 3-6 months after installation (prosthesis delivery), 12-24 months follow-ups. The marginal bone-level measurement was made from the reference point to the first point of contact of the marginal bone with the fixture. The reference point of the implant was fixture-abutment junction (IAJ).

Results

In total, the internal connection group comprised 20 implants in 12 patients, and the external connection group comprised 24 implants in 17 patients. No complications were experienced over the course of the study. At each interval(from baseline to prosthesis delivery, from prosthesis delivery to after 1 year), changes in the marginal bone level at two implant systems were not statistically different. But, the majority of the bone loss occurred during the first 6 months after fixture installation in two systems.

Conclusion

The implants used in this study have same implant macro-design but difference in the fixture/abutment connection methods. The results of this study demonstrated that the amount of marginal bone loss after 1 year of loading was not statistically different between 2 groups($p<0.01$).