

Reference and classification of bone quality in dental implantology

Kiatanant Boonsiriseth

Department of Oral & Maxillofacial Surgery,
Faculty of Dentistry, Mahidol University

Nawakamon Suriyan

Department of Oral and Maxillofacial
Surgery, Faculty of Dentistry,
Mahidol University

Natthamet Wongsirichat

Department of Oral & Maxillofacial Surgery,
Faculty of Dentistry, Mahidol University

Dutmanee Seriwatanachai

Department of Oral Biology,
Faculty of Dentistry, Mahidol University

Abstract

The success rates of dental implants depend on many factors. One important factor is bone quality, which in turn affects the primary cell stability. The classification of bone quality is difficult to follow clinically, as tactile sensation is subjected to variations between surgeons. Though imaging techniques, such as CT or CBCT, are useful to determine the bone quality, they lack precision. CBCT is less invasive at a reasonably lower cost. However, the exposure to radiation, although very low, is still of concern. Histomorphometric analysis shows the microstructure of bone trabeculae reflects both bone density and quality. Molecular analysis of the bone cell density in each region of the jaw can provide vital information during treatment planning for dental implantology, and may help in giving a prediction of its success.

Keyword: dental implant, histomorphometry, bone quality, primary stability, bone formation, CBCT

How to cite: Boonsiriseth K, Suriyan N, Wongsirichat N, Seriwatanachai D. Reference and classification of bone quality in dental implantology. M Dent J 2013; 33: 193-203.

Correspondence author:

Dutmanee Seriwatanachai

Department of Oral Biology,
Faculty of Dentistry, Mahidol University,
6 Yothi rd, Ratchathewi,
Bangkok 10400

Tel: 02-200-7849

Fax: 02-200-7848

Email: dutmanee.ser@mahidol.ac.th

received: 24 July 2013

accepted: 25 July 2013