Screening for Osteoporosis in Dental Clinics by Panoramic Radiographs

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Abstract: A large number of patients with osteoporosis and an increased risk of fractures are under-diagnosed in Japan as well as in other countries. Several bone assessment modalities such as dual energy x-ray absorptiometry (DXA) are readily available; however, many patients with undetected osteoporosis are not identified in medical checkups for osteoporosis because osteoporosis is asymptomatic before the fractures occur. A new triage screening pathway for osteoporosis would be necessary to conquer this silent disease. To date, we have demonstrated significant associations between cortical indices of the mandible detected on panoramic radiographs, bone mineral density and quality of the general skeleton, and actual risk of fractures due to osteoporosis. Further, two clinical trials have clearly suggested that general dental practitioners can identify individuals, especially postmenopausal women, with undetected osteoporosis by cortical indices detected on their panoramic radiographs and refer them to medical professionals for further examinations. Dental clinics may be the new platform for identification of individuals with under-diagnosed osteoporosis as well as an increased risk of fractures.

Key words: Screening, Osteoporosis, Panoramic radiography, Fracture, Dentist