Editorial

Can we successfully manage patients on bisphosphonate therapy?

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Post-menopausal women constitute a significant subset of the patient population seeking to replace removable partial or full dentures with implant-supported restorations. This population may also be taking one of several available drugs to prevent or treat osteoporosis. Oral bisphosphonate therapy inhibits osteoclastic activity, and thus patients who are taking such drugs may be at risk for developing bisphosphonate-induced osteonecrosis of the jaw (BIONJ) following exposure of the bone during tooth extractions or placement of dental implants. For that reason, some authorities have suggested that osteoporotic women receiving oral bisphosphonate therapy may not be good implant candidates.

However, today the risks associated with bisphosphonates can be managed, and dental implants can be placed with little or no risk of BIONJ. Among the three most commonly prescribed oral bisphosphonates – Actonel® (risedronate sodium), Boniva® (ibandronate sodium), and Fosamax® (alendronate) -- Fosamax is the only one of major concern. Fosamax is given at twice the dose of the other two drugs, and it has been associated with a greater incidence of BIONJ. Among patients tracked in our database, Fosamax usage has accounted for 97% of such cases.

Implant candidates who are taking either Actonel or Boniva thus can be treated essentially like any other patient receiving implant therapy. For those taking Fosamax, the length of time on the drug is a critical consideration. Those who have taken it for two years or less appear to have normal bone healing, compatible with osseointegration. Taking Fosamax for more than two years, however, does appear to significantly increase the risk of impaired alveolar bone healing. Fosamax affects mature osteoclasts as well as the osteoclastic precursors in the bone marrow. It usually takes two or more years of drug usage for the number of mature osteoclasts to be reduced enough to affect osseointegration significantly, and if the patient continues taking Fosamax, a slow or impaired recovery of bone-marrow precursors will continue to threaten osseointegration.

What should clinicians do when presented with patients who desire dental implant therapy but have been taking Fosamax for several years? A first option is to have the patient tested for the serum marker C-terminal telopeptide (CTX). A by-product of normal bone turnover, this peptide sequence is the portion cleaved by osteoclasts during bone resorption. Serum levels of it are thus proportional to osteoclastic activity at the time the blood sample was drawn. A CTX level of more than 150 picograms per milliliter is a good indication that the patient's alveolar bone will heal normally following implant surgery and that the implants will successfully osseointegrate.

If ordering the test is not feasible, an alternative is for the patient to discontinue taking Fosamax, at least temporarily. Obviously, this should only be done with the approval of the patient's physician. However, most physicians are comfortable agreeing to such "drug holidays." The effects of bisphosphonate therapy are long-lasting; the drugs' half life is 11 years. Reliable research has shown that patients who have taken bisphosphonates for three to five years can stop using these drugs for up to five years without causing any change in osteoporotic status. Indeed, the US Food and Drug Administration has recently recommended that bisphosphonate drug companies improve their product descriptions to suggest limiting the duration of use.

As in all aspects of implant dentistry, the underlying biology must be respected. For patients receiving bisphosphonate therapy, the underlying biological processes create a window of opportunity. Clinicians must be willing to communicate with their physician colleagues in order to organize drug holidays for osteoporotic patients. Those who do so can enable those patients to get the therapy they want while protecting them both from osteoporosis as well as from the risk of BIONJ.