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Dental implants could be considered as a reliable treatment in florid cemento-osseous dysplasia patients after total excision

KEYWORDS
Dental implant;
Cemento-osseous dysplasia;
Guided bone regeneration;
Total excision

Florid cemento-osseous dysplasia (FCOD) is a benign fibro-osseous disease that is characterized by calcified, acellular, cementum-like tissue at the multiple sites in the jaw and does not require surgical treatment.[1–3] Although studies have demonstrated the possible benefits of the long-term osteointegration at the COD lesion site,[2–4] dental implant surgery is generally contraindicated for patients with FCOD because of the elevated risk of overheating during drilling, infection or osteomyelitis, and poor osteointegration.[3–5] Before placing the implant, surgeons can develop a disease-free implant site by completely excising FCOD lesions, subject to the patient's consent to extensive surgery. Herein, we presented our experience of restoring an edentulous ridge with dental implants for a patient with FCOD.

A 51-year-old woman was referred to our outpatient department from a local dental clinic. She complained about discomfort over her right posterior mandibular region and was informed about the presence of a bony lesion. Clinical and radiographic examinations led to the clinical impression of FCOD (Fig. 1A and B). Because of the absence of swelling or any obvious signs of infection around the tooth 48, we suggested the patient to maintain oral hygiene instead of adopting a more sophisticated treatment approach, such as a restoration plan. However, the patient insisted on the extraction of tooth 48 and excision of the lesion for a definitive diagnosis. She also asked for the fixed implant rehabilitation. After 3 weeks of discussions and considerations, the treatment plan of total excision and bone grafting under general anesthesia was agreed by both the patient and the surgeons. The operation was scheduled on April 19, 2023. After a series of surgical steps and the creation of a bone window in the buccal cortical plate of the mandible (Fig. 1C1 and C2), three FCOD lesions were located with the help of preoperative cone-beam computed tomography (CBCT; Fig. 1C3). The sounding bone was removed using a #702 bur on a rotary instrument, followed by the excision of the lesions in one piece (Fig. 1C4 and C5). The intrabony defect was grafted with the freeze-dried bone allografts, and the cortical bone plate was restored (Fig. 1C6). The histological report validated our clinical impression of FCOD (Fig. 1D1-3). After 3 months of healing without any signs of recurrence (monitored through clinical and CBCT examinations; Fig. 1E), the implant surgery was performed on August 2, 2023, in a traditional staged manner (Fig. 1F). During the surgery, two bone tissue cores were harvested from the implant sites by using a trephine to verify the absence of residual FCOD (Fig. 1G). A CBCT examination performed one year after the surgery revealed no residual or growing FCOD lesion (Fig. 1I). The patient was satisfied with the dental implants and the complication-free clinical outcome.

FCOD is a self-limiting benign disease that does not require treatment in the absence of symptoms.[1–4]

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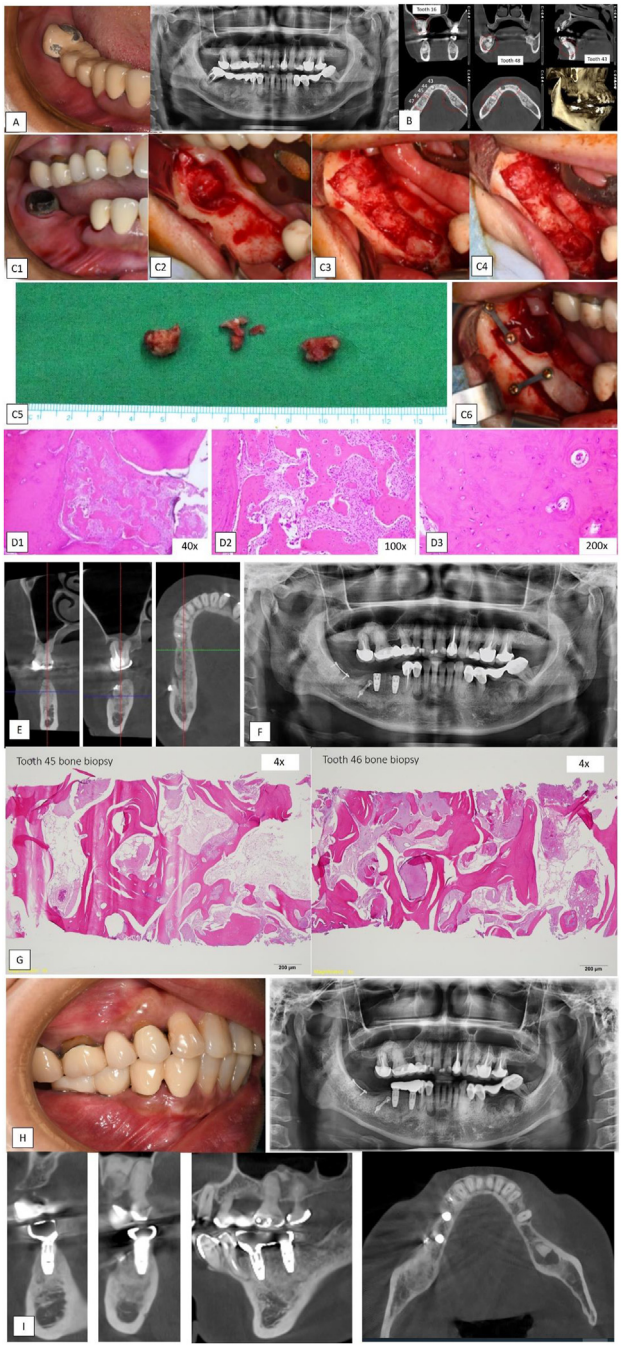

Figure 1 Clinical photographs, histological photomicrographs, and radiographs of this case: (A) Clinical photographs and panoramic radiograph before surgery. (B) CBCT showed multiple COD-like lesions in both jaws. (C) C1: the prosthetic bridge was cut off; C2: the tooth 48 was extracted, and a midcrestal incision was made in the edentulous ridge to equally distribute the full-thickness flap buccally and lingually; C3: a buccal bone window was created with a sagittal saw to expose three main lesions; C4: the cancellous bone surrounding these lesions was trimmed with a #702 bur, and the COD lesions were removed; C5: a picture of the specimens; and C6: the defect was grafted with the freeze-dried bone allografts, and the cortical plate removed previously was restored with a microplate and screws. (D) The three specimens were subjected to a histopathologic examination. Microscopically, the fibrous stroma revealed a benign fibro-osseous lesion characterized by some cemental spherules and the fusion of these spherules into ginger root-like formations in a haphazard woven pattern (hematoxylin and eosin stain; D1: 40×; D2: 100×; and D3: 400×). (E) CBCT scan taken 3 months after surgery. No COD-like lesions were observed. (F) Panoramic radiograph taken after placing the implant. (G) Two 9 mm-long bone tissue cores were harvested while placing the implant over the teeth 45 and 46; they also showed no residual COD tissue (hematoxylin and eosin stain 4×). (H) Clinical photographs and panoramic radiograph after the placement of the implant crown. (I) CBCT scan taken on April 17, 2024 revealing no COD-like lesions, good bone housing, and successful osteointegration of the implants. The alleviation of COD at other sites was also noted.

Therefore, in most published cases, the COD lesion remained on site and directly came in contact with the implant, which resulted in variable outcomes. In cases where patients with FCOD insist on receiving implants, we recommend the complete excision of the FCOD lesion to create a disease-free ridge prior to surgery.

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