Periapical Cemento-Osseous Dysplasia (PCOD): A Challenge for Clinicians. A Clinical Case Report of Failed Dental Implant Therapy In Patients With PCOD

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Penn Dental Medicine

Poster No. P3

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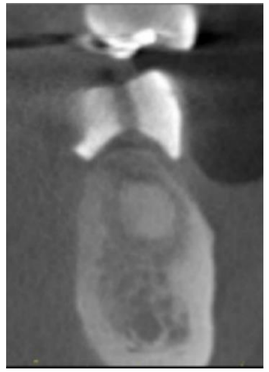
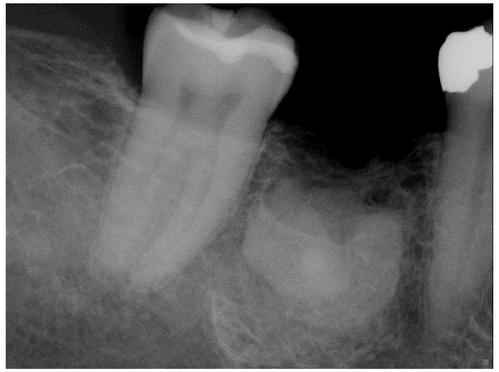
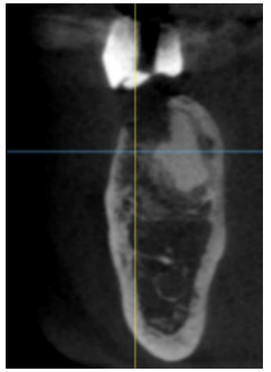
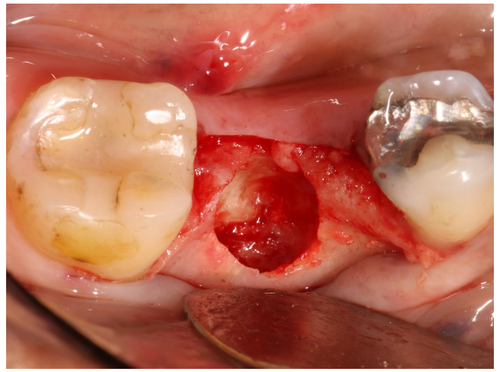
Case 1



Case 2







Background

Periapical cemento-osseous dysplasia (PCOD) is a rare, benign lesion, often asymptomatic and an incidental finding, in which fibrous tissue replaces the normal bone tissue with metaplastic bone and neo-formed cement.[1] PCOD, which is thought to originate from undifferentiated cells of the periodontal ligament, occurs more frequently in middle-aged African American females.[2] PCOD lesions have been shown to consist of dense, acellular, avascular and sclerotic and calcified tissue.[3] Consequently, the capacity for healing, regeneration and osseointegration of the affected areas is diminished.[4] Despite such bleak prospect, implant success has been shown in case reports in the literature.[5]

Aims

The aims of this case series is to present two cases; the first is an implant failure in a 43-year-old African American with PCOD. The second case draws upon the experience gained during management of the first case and details a case which was aborted upon surgical exploration in a 61-year-old African American female.

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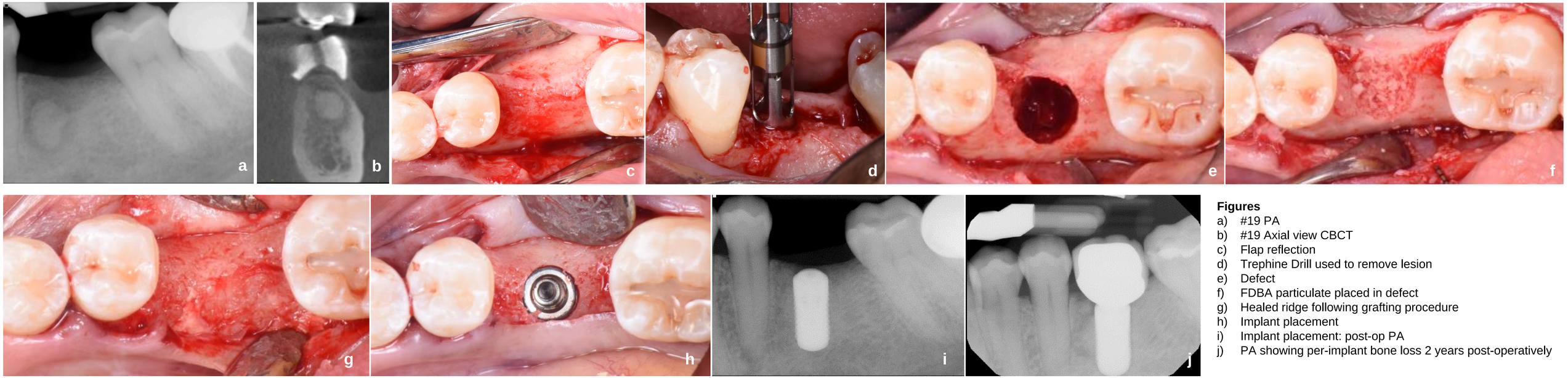

Figures

a) #19 PA
b) #19 Axial view CBCT
c) Flap reflection
d) Trephine Drill used to remove lesion
e) Defect
f) FDBA particulate placed in defect
g) Healed ridge following grafting procedure
h) Implant placement
i) Implant placement: post-op PA
j) PA showing per-implant bone loss 2 years post-operatively

Materials and Methods

Case 1

A 43-year-old African American female attended the Periodontics clinic at the University of Pennsylvania School of Dental Medicine (PDM) with a chief complaint of wanting an implant to replace her missing left mandibular first molar. Health history was non-contributory. The patient reports an uneventful extraction of her carious molar without knowledge of bone graft placement at the time of extraction. Radiographic images reveal a well-defined, localized radiopacity surrounded by a radiolucent rim in the previous extraction site. Following referral to the Oral Medicine department at PDM, a provisional diagnosis of PCOD was provided. Multi-disciplinary treatment planning with restorative, oral medicine and periodontics departments deemed implant placement to be a viable option to replace her missing tooth.

Treatment included removing the dysplastic lesion using a trephine drill followed by ridge preservation with an allograft particulate and resorbable barrier membrane. Following a healing period of 6 months, an implant was placed in the previously dysplastic edentulous molar site.

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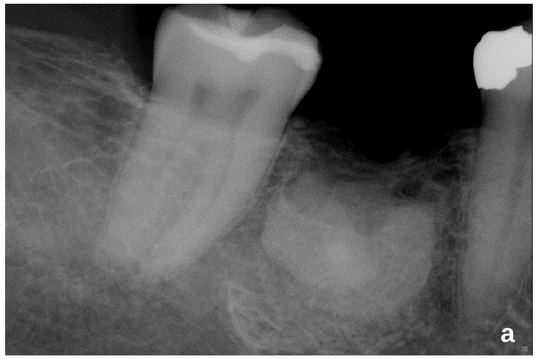

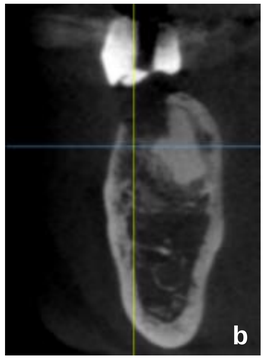

Figures:
a) #30 PA
b) #30 Axial view CBCT
c) Pre-operative view
d) Flap elevation and defect
e) Periapical cemento osseous dysplastic lesion

Materials and Methods

Case 2

A 61 year-old African American Female attended the Periodontics clinic at the University of Pennsylvania School of Dental Medicine (PDM) with a chief complaint of wanting an implant to replace her right mandibular first molar which was extracted many years ago. Health history was non-contributory. PA and CBCT revealed an asymmetrical, well-circumscribed radiopaque lesion in the previous extraction site #30. Following a provisional diagnosis of PCOD by the Oral Medicine department at PDM, the patient opted for implant therapy with simultaneous grafting.

Following flap reflection, a dense, sclerotic and avascular cementum-like lesion was identified. The defect is not amenable for regeneration without removal of the entire dysplastic lesion, further increasing the regenerative demands of this site. Drawing upon previous experience of a failed implant in a less severe case, and discussion of all risks and benefits with the patient, a decision was made to abort removal of the dysplastic lesion and subsequent implant placement.

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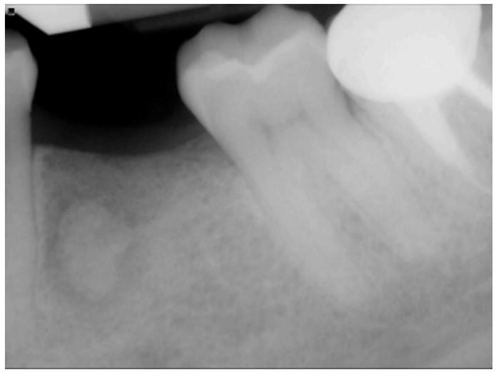
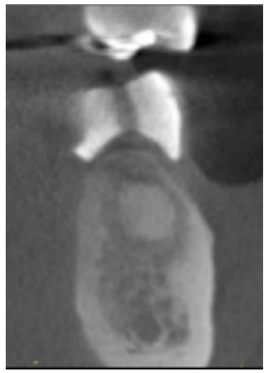

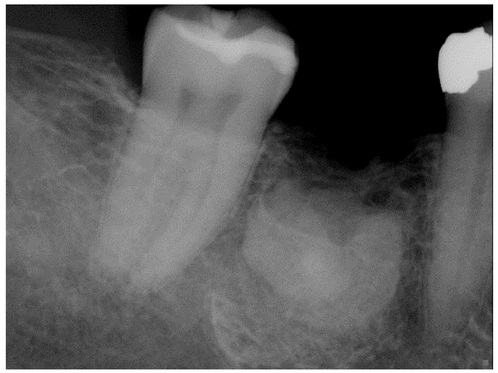
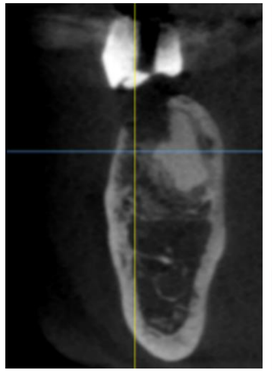
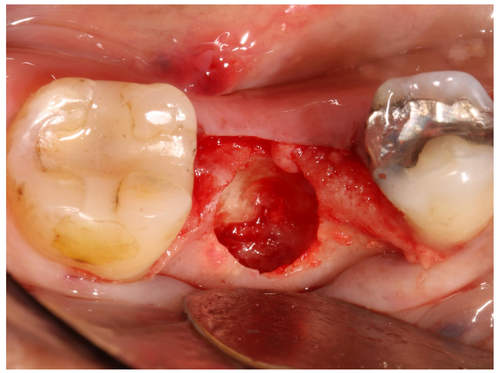

Results

Case 1
2 year follow up revealed a mesio-buccal probing depth of 9mm, bleeding on probing, suppuration and grade I mobility of the implant at site #19.

Case 2
Surgical exploration revealed dense, sclerotic and avascular cementum lesion which is not amenable to regeneration without removal of entire lesion. Decision made to abandon implant placement and pursue alternative treatment.

Conclusions

This case series shows unsuccessful implant therapy in patients with PCOD and further highlights the challenges faced by clinicians attempting to place endosteal implants in this population group. Therefore, in patients with PCOD, alternative restorative options should be preferred.

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