原文題目(出處)：	Multiple idiopathic cervical resorption: case report and discussion of management options. Int Endod J 2011;44:77-85
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內文：

□ Introduction：

a. Cervical root resorption is an uncommon condition of largely unknown etiology
b. In contrast to invasive cervical resorption, which typically affects only one tooth and may be related to trauma or other local factors (Heithersay 1999, 2004)
c. The distribution varies from a single region (e.g. mandibular incisors) to most teeth within one arch or more generally distributed throughout the entire dentition
d. Most affected individuals are healthy, with noncontributory medical histories
e. An attempt has been made to link multiple idiopathic cervical root resorption to feline invasive cervical resorption (von Arx et al. 2009, DeLaurier et al. 2009)
f. Root canal treatment *does not* arrest the resorption (Moody et al. 1990)
g. Management poses serious problems and the condition is generally progressive and leads to loss of affected teeth

□ Case report：

a. 33-year-old Chinese male, with the intention of seeking implant replacement for lost teeth

□ Medical and family/social history：

b. medical history was noncontributory and the patient was healthy, with no record of systemic disease or abnormal blood picture
c. no other family member (father, mother, one older brother and one older sister) had a similar condition

□ Dental history and clinical assessment：

overview：

a. The patient was aware of his condition and sought implant replacement for

missing teeth 13–22 and 35–44

b. All lost teeth had been extracted because of resorption, including the four mandibular incisors before 2004, mandibular premolars by 2007, and five maxillary anterior teeth (13–22) between 2007 and 2009

c. Previous attempts at treatment by various dentists included at least one fixed partial denture and removable prostheses

☐ Clinical assessment：

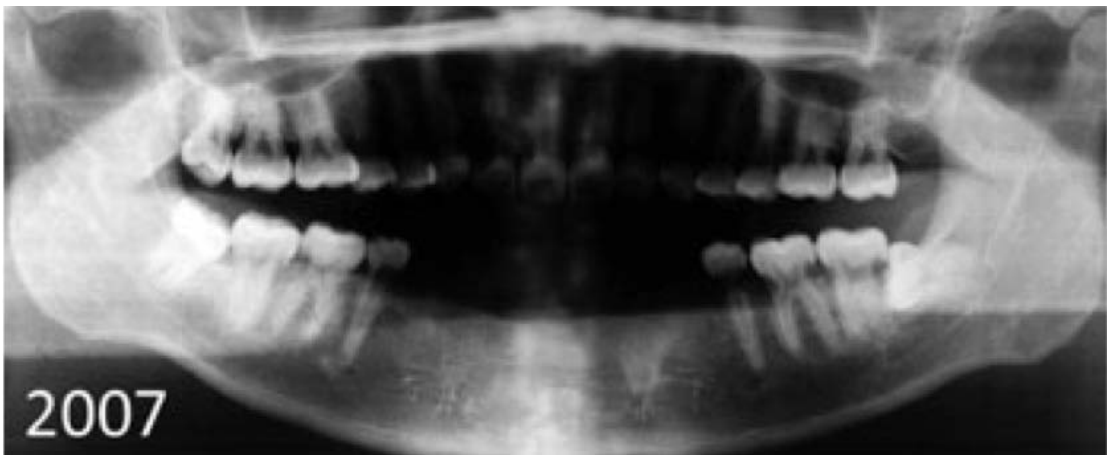
a. caries free

b. All remaining teeth were pulp tested using refrigerant spray and electrical pulp test, and all responded within normal limits.

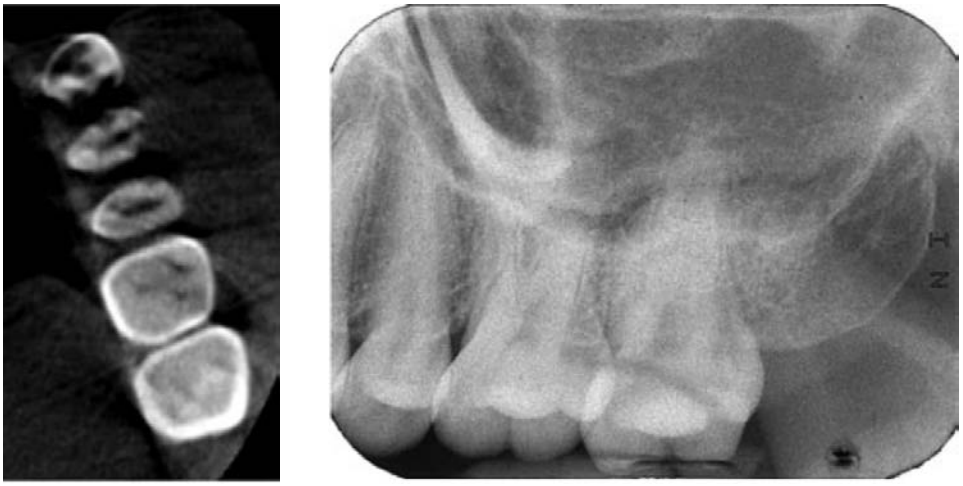
c. Teeth were not tender to percussion and gave a normal sound on percussion. Mobility was normal. Periodontal probing was consistently 3 mm or less and no bleeding on probing was detected

☐ Radiographic assessment(Including CBCT)：

a. All remaining teeth showed radiographic evidence of cervical resorption, including tooth 38 which was unerupted (impacted)

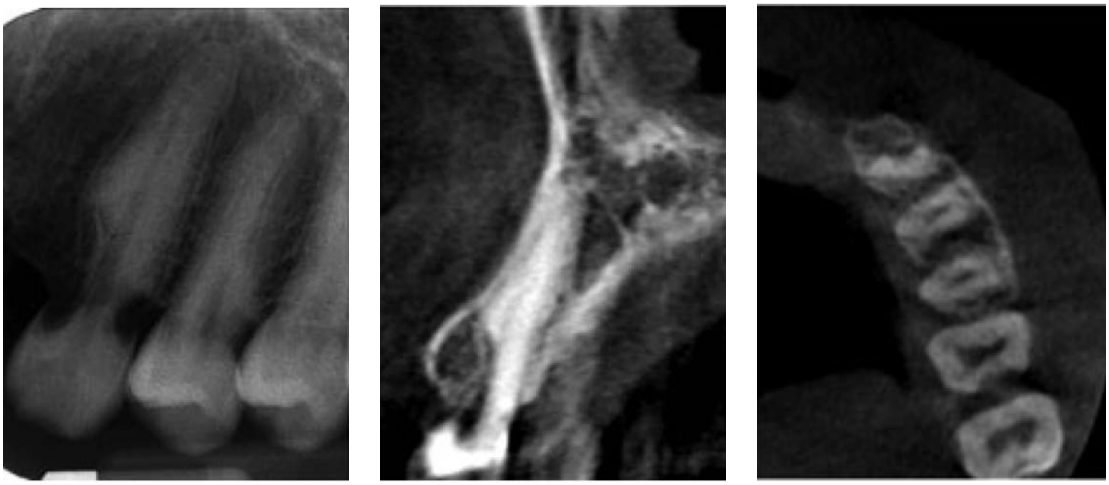


(Figure 2) Periapical radiographs taken at the most recent visit. A small lesion is present on the distal cervical margin of impacted tooth 38 and larger lesions on first and second molars. Alveolar bone has extended into the resorption cavities, especially in teeth 46 and 47, where the bone has extended even into the coronal defect beneath enamel. Despite the bony ingrowth, the teeth did not show clinical evidence of ankylosis

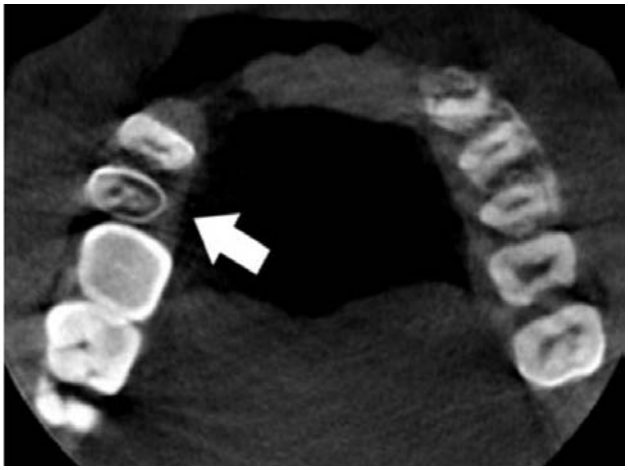


(Figure 3) Periapical radiograph and CBCT image of tooth 25. A small lesion on the mesiobuccal surface is seen in the CBCT image but not the periapical radiograph.

(Figure 4) Periapical radiographs of the maxillary molar region and a CBCT slice through the first molars. Extensive lesions on the buccal and palatal surfaces of tooth 16 and the buccal surface of tooth 26 were not detected by conventional radiography but are clearly present in the CBCT image.



(Figure 5) Periapical radiograph and CBCT images (bucco-lingual and axial slices) of tooth 23. The CBCT images appear to show an extensive pulp exposure on the buccal surface with bone growing into the lesion and expansion of the buccal plate. This is not apparent on the periapical radiograph. Clinically the tooth tested within normal limits to pulp tests and the gingiva was normal in appearance with a probing depth of less than 3 mm.



(Figure 6) CBCT axial slice through the cervical region of the maxillary teeth. Tooth 15 (white arrow) shows the resorptive defect extending beneath enamel and involving most of the circumference of the tooth.

Table 1 Previously reported cases of generalized cervical resorption

Case	Author	*n*[a]	Age	Gender	Race	Systemic condition?
1	Kerr *et al.* (1970)	24	68	F	Caucasian	Low Ca, high P
2	Kerr *et al.* (1970)	17	30	F	Caucasian	High ALP [b]
3	Hopkins & Adams (1979)	18	20	F	Not reported	No
4	Moody *et al.* (1990)	17	27	M	Caucasian	No
5	Matsui *et al.* (1998)	17	31	M	Japanese	No
6	Liang *et al.* (2003)	13	19	F	Latina	No
7	Liang *et al.* (2003)	12	50	M	Caucasian	Cholecystectomy
8	Iwamatsu-Kobayashi *et al.* (2005)	21	49	F	Japanese	High ALP
9	Neely & Gordon (2007)	19	63	M	Caucasian	Hypothyroid
10	von Arx *et al.* (2009)	14	68	M	Caucasian	Not stated
11	von Arx *et al.* (2009)	20	66	M	Caucasian	Not stated
12	This case	31	33	M	Chinese	No

Generalized is defined as more than 10 involved teeth in at least three quadrants.
[a]Number of involved teeth.
[b]ALP: serum alkaline phosphatase.

☐ Discussion：

a. The present case represents an extreme example of multiple cervical root resorption, involving every tooth and leading progressively to the loss of 14 teeth, at a relatively young age
b. The pattern of resorption in this and other similar cases differs in character from that described for invasive cervical resorption affecting predominantly single teeth
c. In invasive cervical resorption the lesion tends to have a small point of entry on the root surface and most of the resorption occurs within the bulk of dentine, avoiding both the root surface and the pulp chamber (Heithersay 1999, 2004). The lesions in this case are more in the form of an external defect affecting a large area of the cervical root surface
d. The defect becomes filled with bone, although without ankylosis

e. Clinically, the resorptive lesions were not accompanied by signs of overt inflammation (gingivitis, bleeding on probing, increased pocket depth), which has also been confirmed histolog- ically (Iwamatsu-Kobayashi et al. 2005, von Arx et al. 2009)
f. Impacted third molar in this case indicates that exposure to the oral environment is not a predisposing factor
g. Attempts to link the condition to feline odontoclastic resorptive lesions (von Arx et al. 2009, DeLaurier et al. 2009), implicating feline herpes virus FeHV-1, are a useful insight, but it is premature to consider the virus as the cause of the condition

☐ Management

Typically, involved teeth are extracted when the lesions progress to the point where a crown fracture is likely or has actually occurred (Moody et al. 1990, Liang et al. 2003), eventually leading to the extraction of all teeth and fabrication of complete dentures (Kerr et al. 1970)

(i) observation, with episodic extraction and prosthetic replacement of fractured teeth
(ii) early intervention with surgical exposure, curettage of lesions and restoration with glass ionomer cement (sometimes with root canal treatment of involved teeth)
(iii) crown resection with root submergence to preserve alveolar bone, and prosthetic replacement
(iv) extraction and replacement with implants
(v) extraction of all teeth, with full dentures
(vi) medical management using bisphosphonates to arrest resorption.

☐ A fixed prosthesis to replace lost mandibular incisors failed when abutment teeth subsequently underwent resorption
☐ A removable partial denture to replace lost maxillary incisors resulted in extensive loss of alveolar bone, making subsequent implant placement more difficult
☐ There are a number of problems with this conservative approach: CBCT shows that lesions are more widely distributed than appears on conventional radiographs, including buccal and lingual/palatal surfaces; many lesions will be inaccessible; and ongoing periodontal management will be needed because gingival reattachment is unlikely. In addition, lesions tend to recur
☐ Extraction of teeth and replacement with implant-supported prostheses is a more radical intervention, but may serve the long-term interests of the patient by maintaining healthy bone support.
☐ In one case report, resorption ceased after the patient was placed on

bisphosphonate therapy for an orthopaedic condition (Iwamatsu-Kobayashi et al. 2005), over a period of 6 years

☐ If lesions are detected early, surgical exposure and restoration with GIC will probably maintain most teeth for many years. As resorption progresses and more teeth are involved, staged extraction and implant placement to support removable partial prostheses should follow

☐ CBCT was useful in demonstrating the extent of the lesions more precisely, especially on buccal and lingual/palatal surfaces

題號	題目
1	The external resorption process usually begin with (A) Distinct border of teeth (B) Internal resorption of teeth (C) Symptom and sign (D) Indistinct border of teeth
答案 (D)	出處：Contemporary Oral and Maxillofacial Pathology 2nd edition, p371, p372
題號	題目
2	Ankylosis appears that whenever the connective tissue of the periodontal membrane is lost, it allow_____ to come in direct contact with alveolar bone
	(A) Only cementum (B) Only dentin (C) enamel (D) Both A and B
答案(D)	出處： Contemporary Oral and Maxillofacial Pathology 2nd edition, p372