



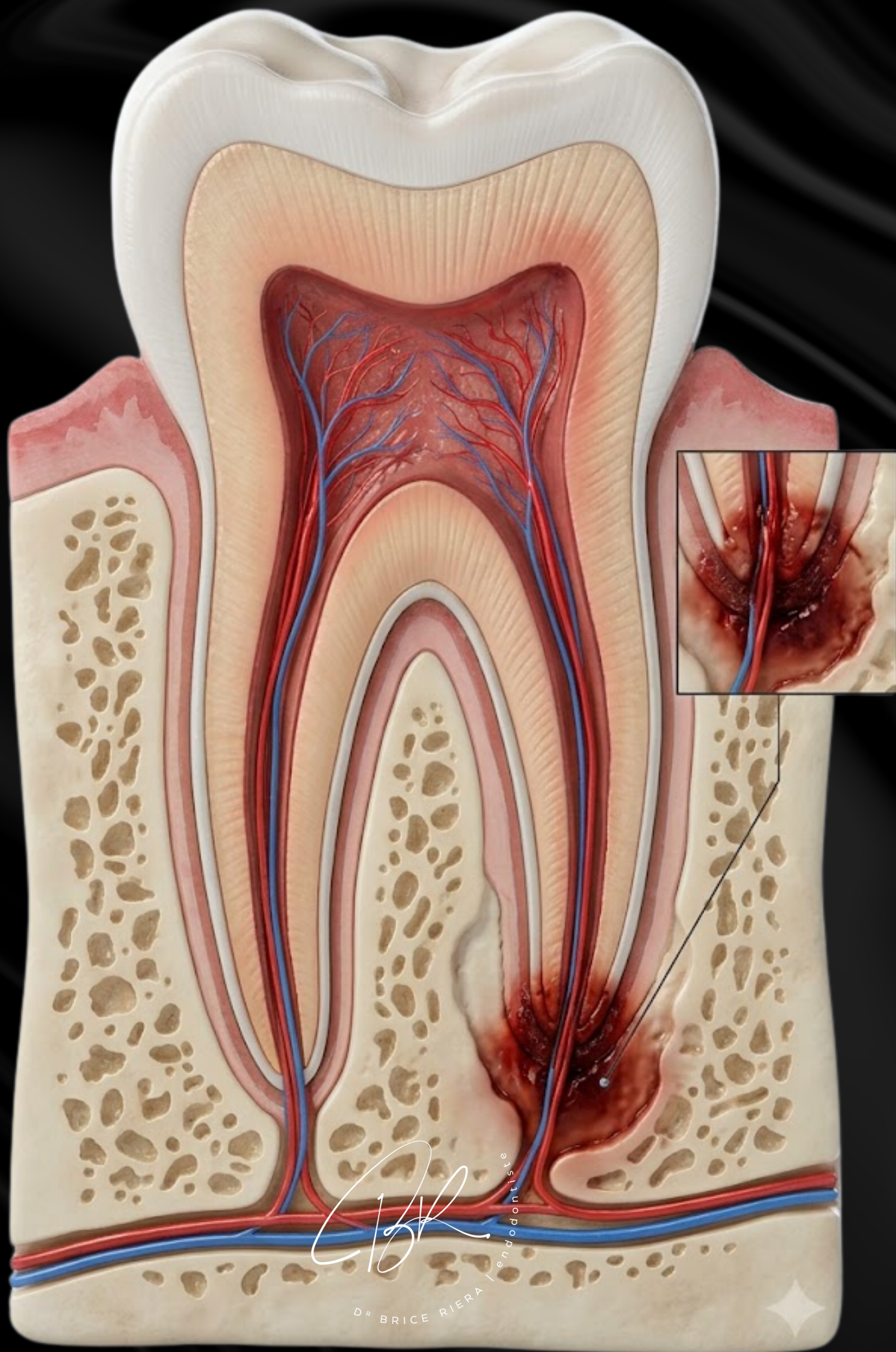
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QUE SE PASSE-T-IL DANS UNE
OSTÉITE condensante ?


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IL EXISTE UNE IRRITATION PROVENANT
DE L'ESPACE *pulpaire*



**CETTE AGRESSION PROVOQUERAIT UNE
INFLAMMATION CHRONIQUE RÉSULTANT
EN UNE FORMATION OSSEUSE (PEUT-
ÊTRE POUR CLOISONNER l'irritation)**



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Histologic Examination of Condensing Osteitis in Cadaver Specimens

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Abstract

Objectives: Condensing osteitis is a radiographic finding, but with no reported histologic investigations in humans. The objectives of this study were to evaluate and describe histologically condensing osteitis in human cadaver jaws. Patterns of bone formation and presence/absence and nature of inflammation were examined. **Methods:** Specimens of mandibles and maxillas were obtained from cadavers and examined radiographically. Those periapical areas with characteristics of condensing osteitis were removed *en bloc*, decalcified, and processed for light microscopy. For comparison, specimens that showed normal apical radiographic anatomy were also removed for examination. **Results:** Normal apical regions showed an intact periodontal ligament and a thin layer of alveolar bone proper surrounded by cancellous bone with fatty marrow. In contrast, areas of condensing osteitis exhibited areas of inflammation or no inflammation, occupied by connective tissue. This area was bordered by a rim of varying widths of dense lamellar-type bone replacing the cancellous bone and marrow. **Conclusions:** The histologic changes of condensing osteitis consisted of the replacement of cancellous bone with compact bone. Areas of fibrosis and an inflammatory infiltrate were seen in some but not all specimens. All teeth exhibiting condensing osteitis had an identifiable etiology that likely resulted in degenerative pulp disease. (*J Endod* 2013;39:977–979)

Key Words

Condensing osteitis

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The most recent (2012) American Association of Endodontists Glossary of Endodontic Terms defines condensing osteitis (focal sclerosing osteomyelitis) as “a diffuse radiopaque lesion believed to represent a localized bony reaction to a low-grade inflammatory stimulus, usually seen at the apex of a tooth (or its extraction site) in which there has been a long-standing pulp pathosis.” There are no published reports of its histologic findings; the phenomenon is currently an incidental radiographic finding only.

Condensing osteitis is the most common radiopaque lesion found in the jaws, occurring in 4%–7% of the population (1). The typical radiographic features of condensing osteitis include diffuse radiopaque borders that are concentrically arranged around a root apex that may or may not have a radiolucent inflammatory lesion (2). Condensing osteitis predominates in the mandible and is most frequently associated with the mandibular first molar and in female patients (3, 4). It may be found in edentulous areas or associated with teeth with inflamed or necrotic pulps (3–7). The forming in response to a long-standing, low-grade inflammatory stimulus.

Condensing osteitis may represent a persistent after appropriate treatment, most will regress with radiographic normalization of the periodontal ligament.

Authors describing condensing osteitis have attributed the irritant emanating from the pulp space (2, 4). Presumably, the irritant is sufficient to stimulate bone formation, perhaps in an attempt to “wall off” the irritant. The interpretation has been that the increased bone and/or an increase in endosteal bone formation there are no published studies of the histologic changes associated with periapical inflammation.

The objective of this study was to determine the histologic changes in recovering cadaver jaws and studying lesions of condensing osteitis. The apical regions were examined histologically for the associated osseous changes.

Materials and Methods

Specimens were obtained from cadavers at the University of Iowa Anatomy Department at the University of Iowa. Information on the cadavers was supplied. Mandibles were then radiographed by a radiologist with likely pathosis from caries, deep restorations, or other radiographically detectable pathology. Regions were examined radiographically for condensing osteitis (Fig. 2). For comparison, radiographically that did not show these changes were also made of each specimen before decalcification.

These identified areas of the jaws (both maxilla and mandible) were sectioned with a bone saw to include the bony area and then decalcified. Both comparison and study areas were then cut with a razor blade transversely or longitudinally. Histologic sections were stained with hematoxylin and eosin and examined by light microscopy at ×50 magnification.

- No Inflammation
- Mild Inflammation
- Moderate Inflammation
- Severe Inflammation

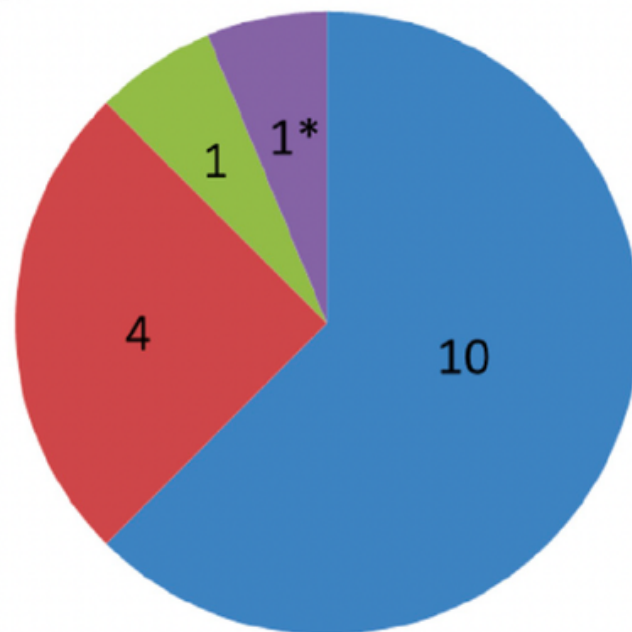


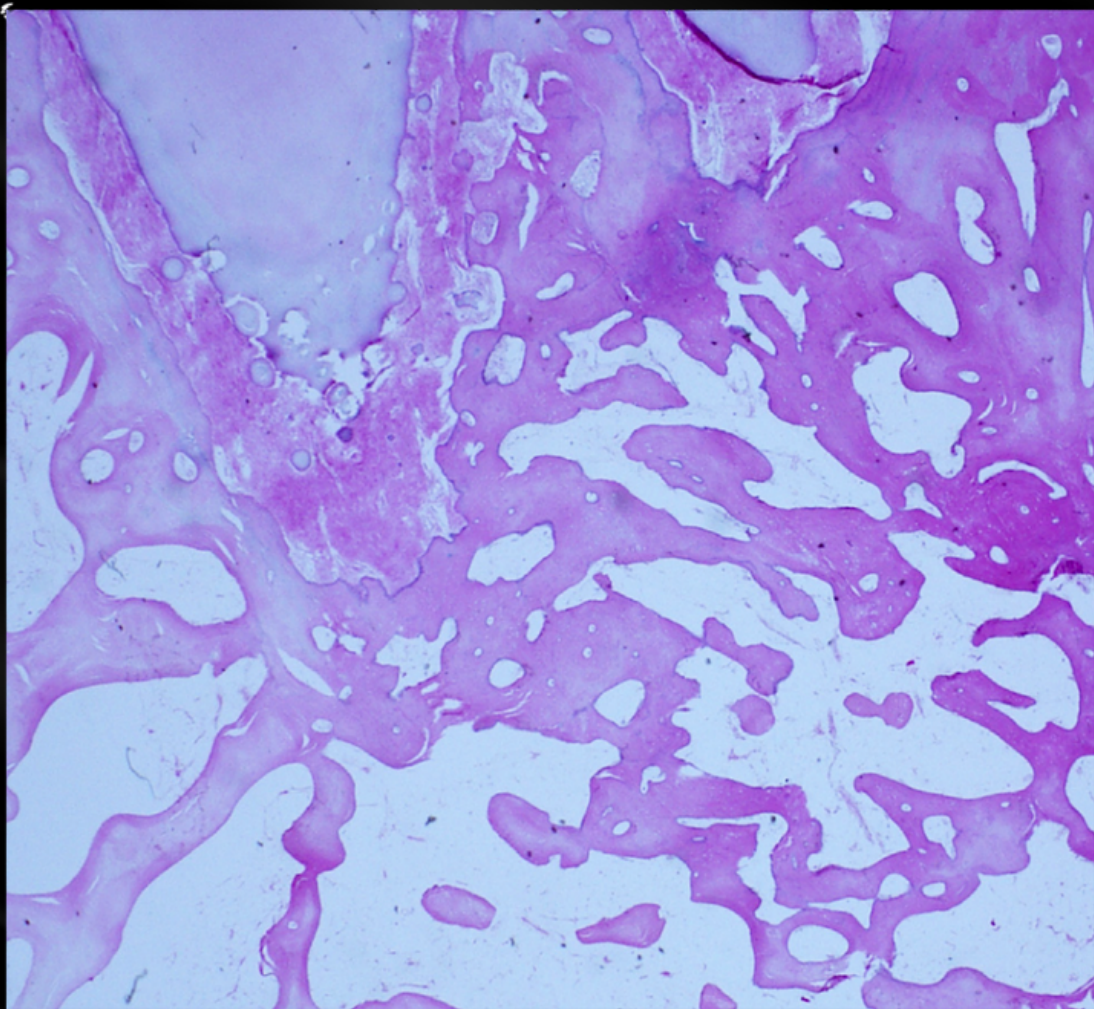
Figure 6. Degree of inflammation present (16 cases). *Area of condensing osteitis in the case was found surrounding a periapical granuloma.

CEPENDANT CETTE ÉTUDE RÉVÈLE QUE
L'HISTOLOGIE DE 10 CAS SUR LES 16
ÉTUDIÉS NE PRÉSENTE AUCUNE
INFLAMMATION péri apicale !

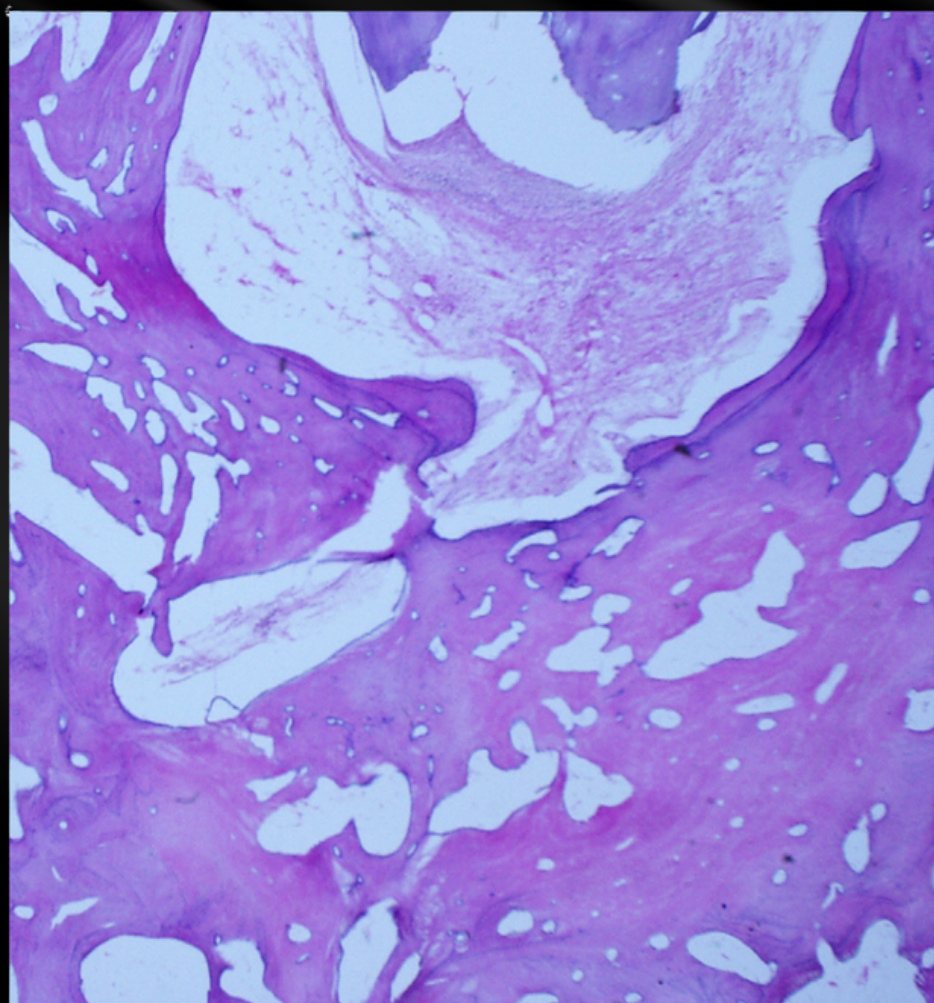
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**ET HISTOLOGIQUEMENT QUE
DE PASSE-T-IL ?**



RÉGION PÉRI APICALE NORMALE



OSTÉITE CONDENSANTE



LE REMPLACEMENT DES
ESPACES MÉDULLAIRES ET DE
L'OS TRABÉCULAIRE
(SPONGIEUX) PAR UN OS
DENSE ET COMPACT

This histological image shows a section of bone tissue stained with hematoxylin and eosin (H&E). The image displays a transition from normal spongy bone with clear trabeculae and marrow spaces to a region of condensing osteitis. In this pathological area, the marrow spaces and trabeculae are replaced by a dense, compact bone structure. Four black arrows point to the interface and the dense bone area, highlighting the replacement of normal bone architecture.

OSTÉITE CONDENSANTE



**DES ZONES DE FIBROSE
REMPLAÇANT LA MOELLE
GRAISSEUSE**

OSTÉITE CONDENSANTE



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