

Furcation

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Introduction:

- ▶ Inflammatory periodontal disease, if unabated, ultimately progresses to attachment loss sufficient to affect the bifurcation or trifurcation of multirooted teeth.
- ▶ The furcation is an area of complex anatomic morphology that may be difficult or impossible to debride by routine periodontal instrumentation.

ETIOLOGY:

- ▶ bacterial plaque and the inflammatory consequences that result from its long-term presence
- ▶ local anatomic factors (e.g., root trunk length, root morphology)
- ▶ local developmental anomalies (e.g., cervical enamel projections [CEPs]).
- ▶ AGE
- ▶ Dental caries and pulpal death

diagnosis:

- ▶ Nabers probe
- ▶ Transgingival probing

- ▶ (1) the morphology of the affected tooth,
- ▶ (2) the position of the tooth relative to adjacent teeth,
- ▶ (3) the local anatomy of the alveolar bone,
- ▶ (4) the configuration of any bony defects, and
- ▶ (5) the presence and extent of other dental diseases (e.g., caries, pulpal necrosis).

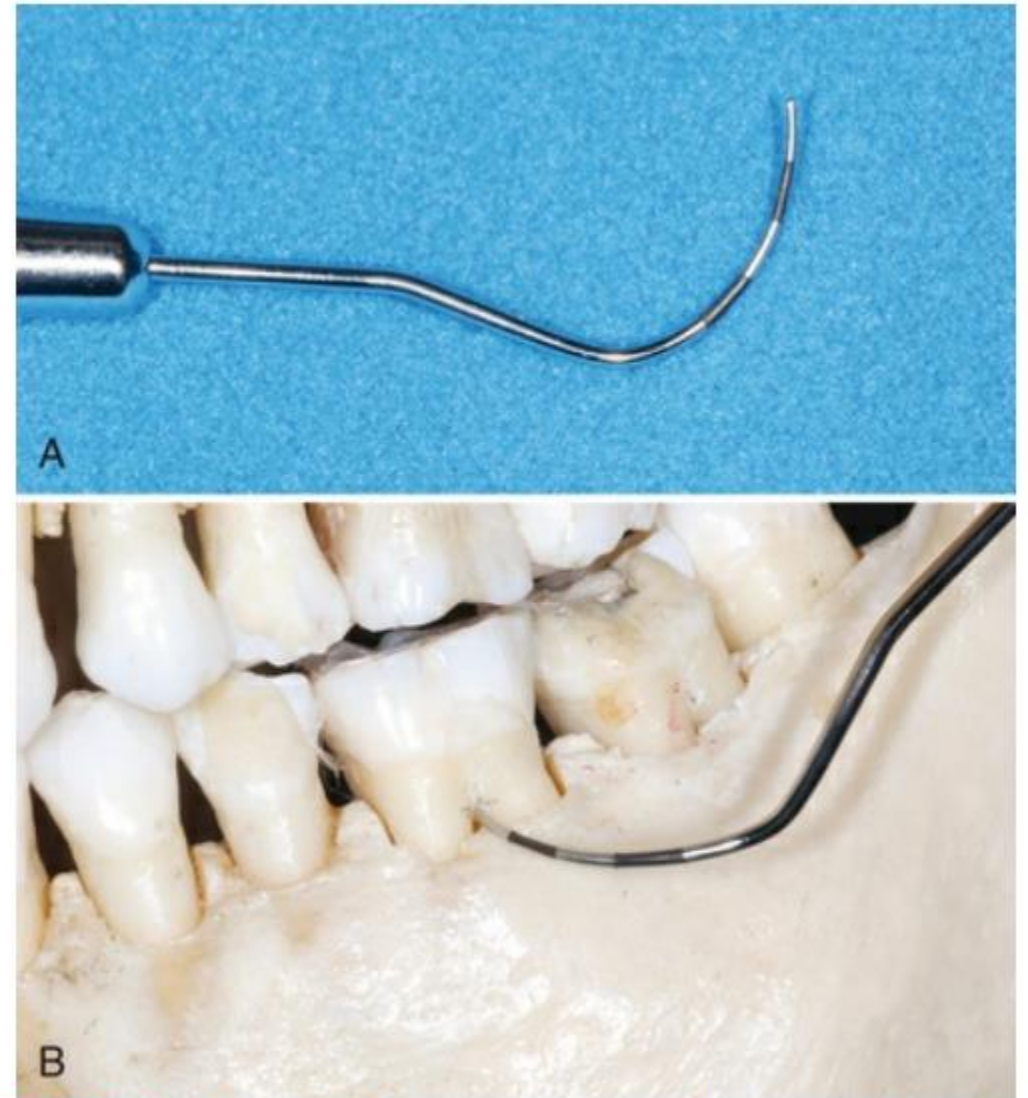


FIG. 64.1 (A) The Nabers probe is designed to probe into the furcation. (B) The probe placed into a class II furcation of a dried skull.

Classification:

GLICKMAN'S CLASSIFICATION OF FURCATION INVOLVEMENT

GRADE I



Grade I is incipient or early stage. SUPRABONY pockets and primarily affects soft tissue with no radiographic changes found.

GRADE II



Grade II can affect one or more furcations of same tooth. Lesion is essentially CUL-DE-SAC with a definite horizontal component.

GRADE III



Grade III, the bone is not attached to the dome of the furcation. Clinically may not even be able to pass periodontal probe through and through because of interference with bifurcation ridges or heavy margins. Furcation is filled with soft tissue. Radiographically displays as a radiolucent area in the notch of the tooth.

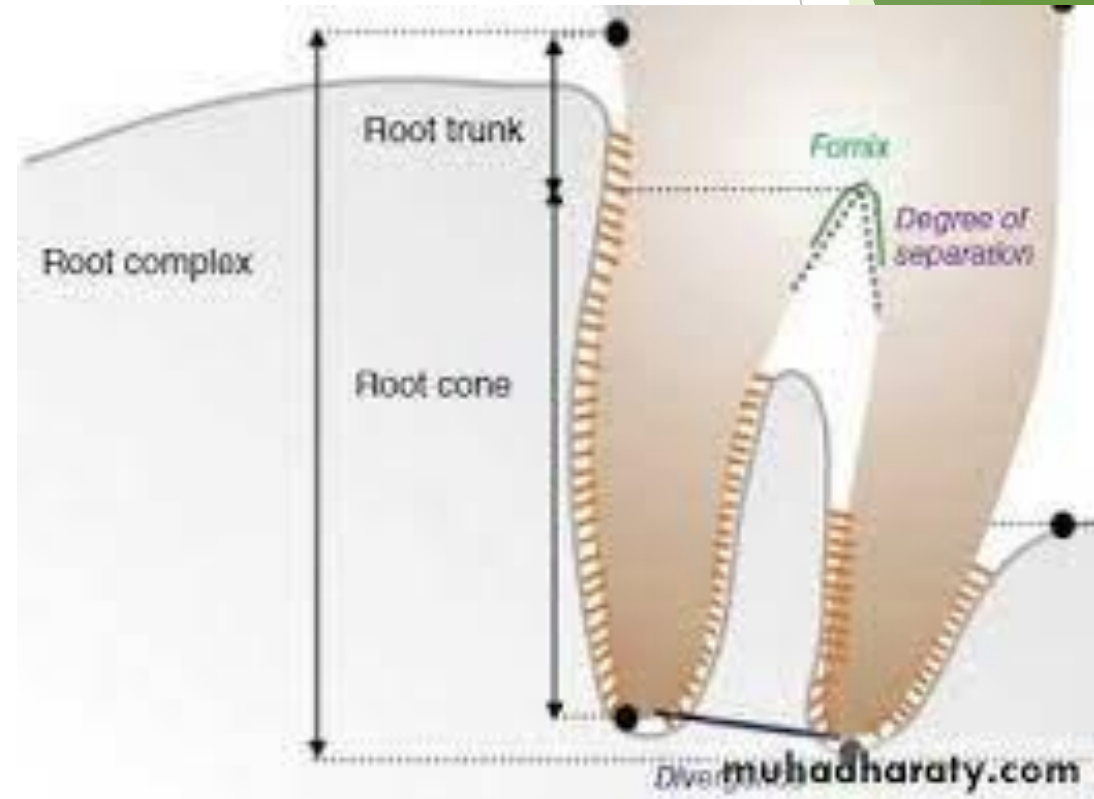
GRADE IV



Grade IV, interdental bone is destroyed and has periodontal recession. Furcation opening is CLINICALLY SEEN. A through and through tunnel exists.

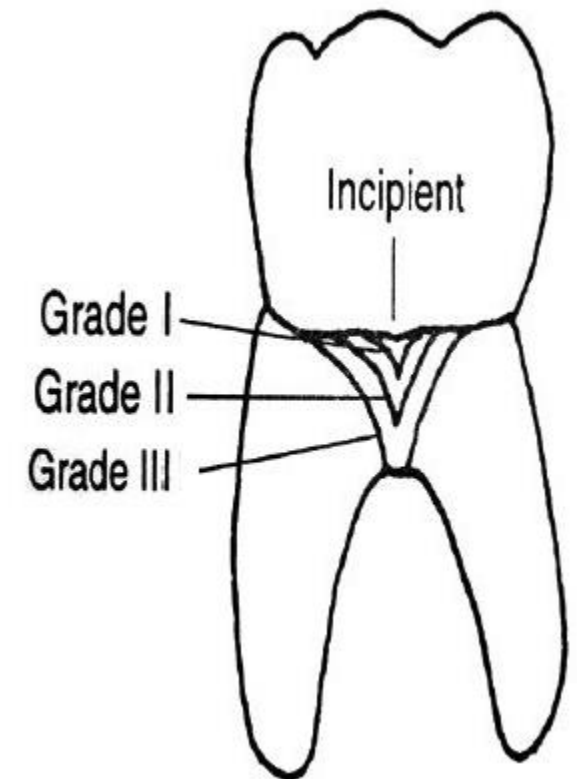
Local anatomic factors:

- Root trunk length
- Root length
- Root form
- Interradicular dimension
- Anatomy of furcation
- Cervical enamel projections



► Classification of Cervical Enamel Projections

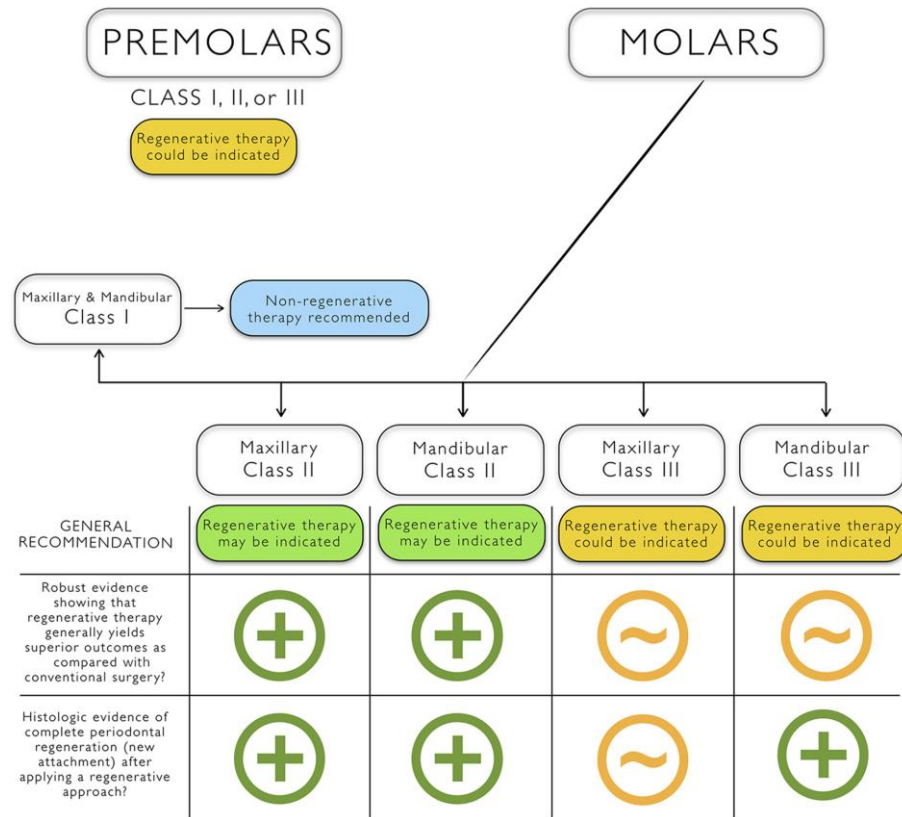
- Grade I: The enamel projection extends from the cementoenamel junction of the tooth toward the furcation entrance.
- Grade II: The enamel projection approaches the entrance to the furcation. It does not enter the furcation, and therefore no horizontal component is present.
- Grade III: The enamel projection extends horizontally into the furcation.



Anatomy of the lesion:

- ▶ Pattern of attachment loss
- ▶ Anatomy of the adjacent lesion

Treatment of furcations:



PATIENT FACTORS	
<input type="checkbox"/>	SYSTEMIC Uncontrolled diseases and disorders (e.g., diabetes, obesity, immunocompromised patients)
<input type="checkbox"/>	BEHAVIORAL Smoking, oral hygiene, patient compliance
<input type="checkbox"/>	PSYCHOLOGIC Stress, anxiety, mental illness
ANATOMIC AND SITE FACTORS	
<input type="checkbox"/>	Access to surgical site
<input type="checkbox"/>	Interproximal bone height relative to furcation
<input type="checkbox"/>	Root trunk length
<input type="checkbox"/>	Root concavities and grooves
<input type="checkbox"/>	Root proximity/convergence
<input type="checkbox"/>	Furcation entrance width
<input type="checkbox"/>	Furcation defect depth (horizontal)
<input type="checkbox"/>	Cervical enamel projections and enamel pearls
<input type="checkbox"/>	Tooth mobility
<input type="checkbox"/>	Periodontal biotype
<input type="checkbox"/>	Width of keratinized tissue
<input type="checkbox"/>	Assessment of endodontic status
<input type="checkbox"/>	Proximity of restorations to furcation entrance

Table 10. Treatment approaches for furcation-involved molars based on the degree of involvement

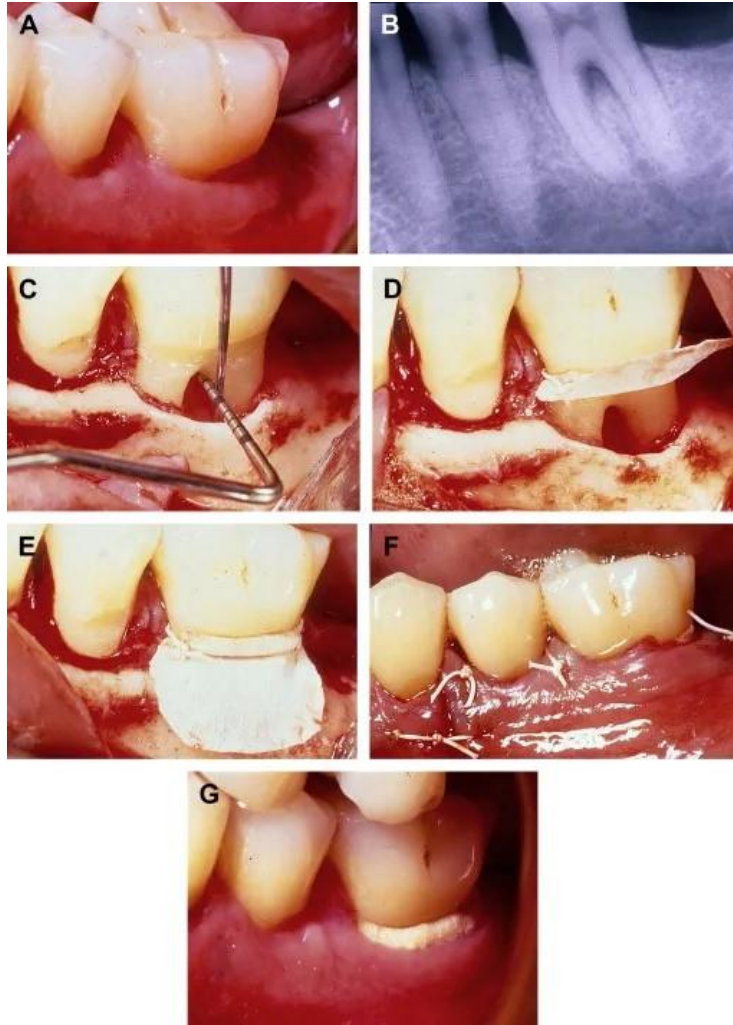
class I	<ul style="list-style-type: none">• scaling and root planing• odontoplasty
class II	<ul style="list-style-type: none">• scaling and root planing• odontoplasty• open debridement/furcation operation• GTR (mandibular molars)• root resection• tunnel preparation• extraction/implant placement
class III	<ul style="list-style-type: none">• open debridement/furcation operation• GTR (questionable success)• root resection• tunnel preparation• extraction/implant placement

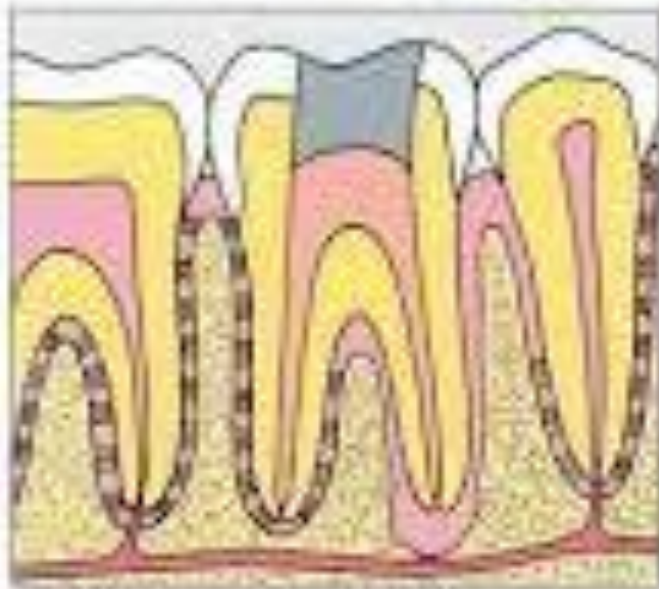


FIGURE 4. Flap reflection demonstrates a Class I furcation involvement and a cemento-enamel projection.

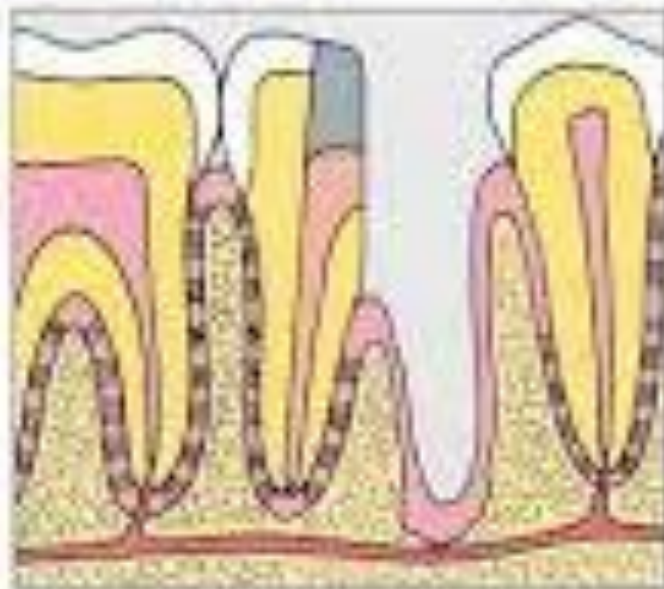


FIGURE 5. Following odontoplasty, the horizontal dimension of the furcation involvement and cemento-enamel projection have been eliminated. Restoration was not required.

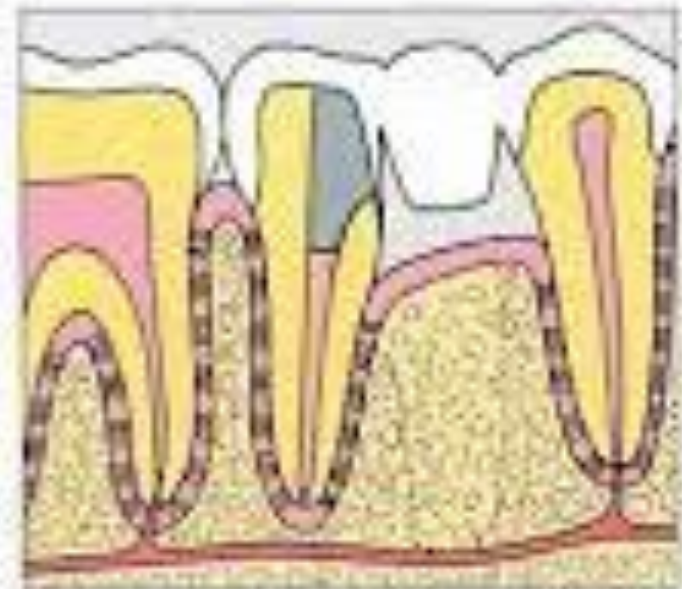




Tooth with bony defect is endodontically treated.



The diseased crown and root are sectioned off and removed.



A fixed bridge is placed to stabilize the treated tooth. As healing occurs, bone fills the defect.





► Thank you!!!



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