Endodontic Center
A Professional Dental Corporation
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Internal vs External Resorption

Resorption is considered to be **internal** if the original site of the resorption starts in the pulp and **external** if the original site is the periodontal ligament.

Internal	Characteristics	External
✔	***Asymptomatic***	✔
✔	***Pink discoloration***	✔
✔	***Pulp test*** *usually normal*	✔
	Defect moves with ***X-ray angulations***	✔
	Pulpal wall often intact *radiographically*	✔
	Pulpal wall *intact histologically*	✔
✔	***Periodontal percussion, palpation WNL***	✔
	Portals of entry *near osseous crest*	✔
	Portals of entry *hard to locate surgically*	✔
Odontoblasts→Clasts		***Osseous Cells→Clasts***

Internal Resorption

Internal resorption results from a **chronic pulpitis**, although why some teeth are affected more dramatically than others is not known. Trauma and infection are important etiological factors. The typical appearance is a **smooth widening of the root canal walls**. On rare occasions (when the pulp chamber is affected) it may appear as a ‘pink spot’ as the enlarged pulp is visible through the thin wall of the crown. Any tooth may be affected but the **incidence is highest in incisors**. The destruction of dentin may take years or may be very rapid. The pulp usually remains **vital and symptomless** until the wall of the root is perforated, when it may become necrotic.

Diagnosis of Internal Resorption

In most cases diagnosis is simple but occasionally it may be **difficult to differentiate** between internal and external resorption. In internal resorption the outline of the canal is interrupted and usually appears as a smooth bulge. Internal resorption is often difficult to detect in posterior teeth and may be seen only after root treatment has been completed.

Treatment for Internal Resorption

Prompt **root canal treatment is necessary in all diagnosed cases of internal resorption**. The resorption ceases as soon as the chronically inflamed pulp is removed. **Treatment complications** that may occur are as follows: Hemorrhage (Excessive); Perforation; Inter appointment medication with $CaOH_2$ dressing; Warm gutta percha obturation; Surgical treatment for perforations.

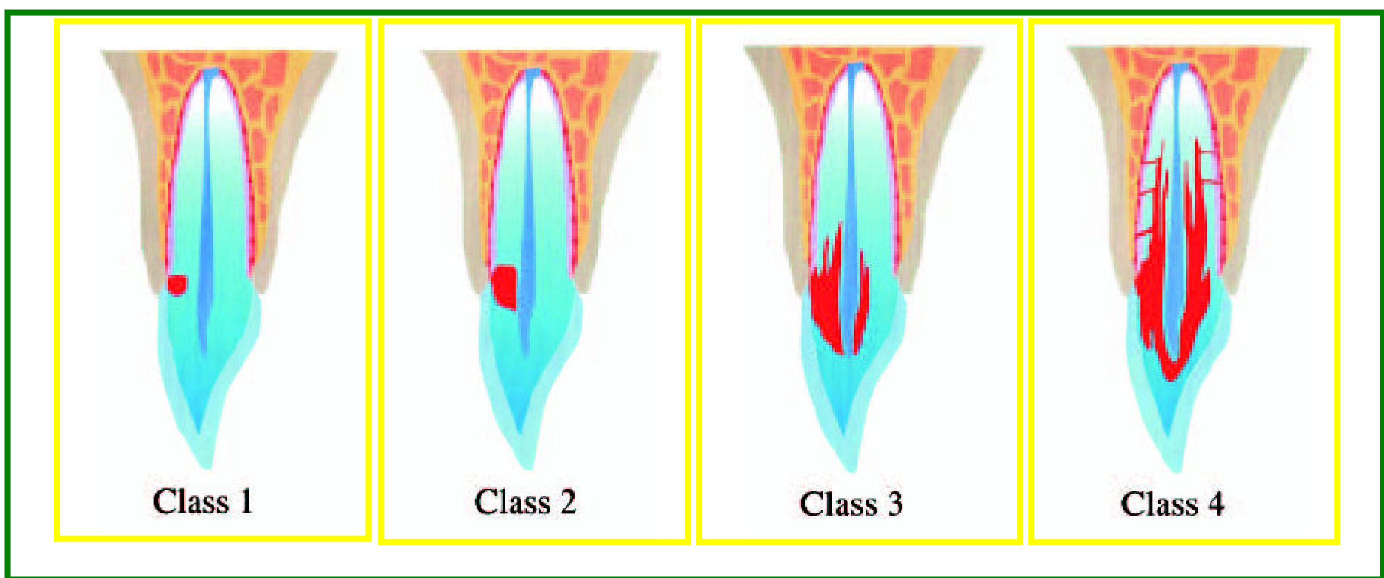
External Resorption

External resorption originates in the PDL and is recognized by an irregular radiolucent area overlying the root canal; the canal outline remains visible and intact. Sometimes external resorption is not easy to diagnose from the radiograph when the canal outline is indistinct. Three types of external resorption are:

- **Inflammatory Resorption** – Result of trauma, orthodontics, or pulpal necrosis
- **Replacement Resorption** – Ankylosis
- **Extra Canal Invasive Resorption** – Variable, may have inflammation and/or replacement

Extra Canal Invasive Resorption (ECIR)

ECIR is a clinical term used since 1998 to describe an uncommon, insidious and often aggressive form of external resorption.



Heithersay's Classifications for ECIR

ECIR Etiology	*Treatment for ECIR*
Bleaching endodontically treated teeth Certain systemic diseases Excessive mechanical or occlusal forces Idiopathic Impaction of teeth Luxation injuries Periapical inflammation due to a necrotic pulp Periodontal disease Radiation therapy Reimplantation of teeth Tumors and cysts	***Identify & remove cause and predisposing factors*** ***Class 1 – Possible RCT and restore defect*** ***Class 2 – RCT and restore defect*** ***Class 3 – RCT and surgically restore defect*** ***Class 4 – Extraction/replace tooth*** ***Follow up with 6 month recare appointments***

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