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Differences between primary and permanent teeth

Features of Deciduous Crowns

1) The crowns in the primary dentition are shorter relative to the length of the root (i.e., smaller crown: root ratio). In addition, they are wider mesiodistally in comparison with their cevicoocclusal height than the corresponding perm. Teeth giving the anterior teeth a cusp shape appearance and the molar teeth a square appearance.

2) The occlusal tables of primary molars are constricted buccolingually and much narrower mesiodistally when compared with those of the permanent molars.

3) Enamel and dentin are thinner compared with permanent teeth.

4) The thickness of the enamel and dentin of primary teeth is approximately half that of permanent teeth.

5) The enamel rod direction in the cervical area is angled occlusally compared with the apical direction in permanent teeth.

6) Crowns of primary teeth are characterized by significant cervical constriction in both the mesiodistal and faciolingual dimensions.

7) The primary molars have a pronounced buccal cervical bulge.

8) The contact areas of primary molars are flat and very broad buccolingually compared with the permanent molars.

10) The color of the deciduous tooth is lighter than permanent teeth. The refractive index of milk is similar to deciduous tooth enamel. Hence, the teeth are termed as milk tooth

Features of a Deciduous Pulp

1) The size of the pulp relative to the crown is larger in the primary teeth.
2) The pulp horns of the deciduous tooth (especially the mesial horns) are closer to the DEJ of the tooth than are those of the permanent tooth.
3) The mandibular molar has larger pulp chambers than does the maxillary molar in the deciduous tooth.
4) The form of the pulp chamber of the deciduous tooth follows the surface of the crown.
5) Usually there is a pulp horn under each cusp.
6) Thin and slender roots pulp canals, thin pulp canals
7) Accessory canals extend from floor of the pulp chamber to the furcation or interradicular area.
8) Increased blood supply, due to which the deciduous pulp exhibits typical inflammatory response.
9) Responds by inflammatory process, resulting in increased internal resorption.
10) Reduced sensitivity to pain due to less number of nerve fibers.
11) Increased reparative dentin formation.
12) Poor localization of infection and inflammation.
13) Multiple ramification, making complete debridement impossible.
14) Ribbon shaped root canal (hour glass appearance) that is narrower mesiodistally, discourages gross enlargement of the canal.
15) The root canal system of fully developed primary molars is extremely tortuous and complex.

Features of a Deciduous Root

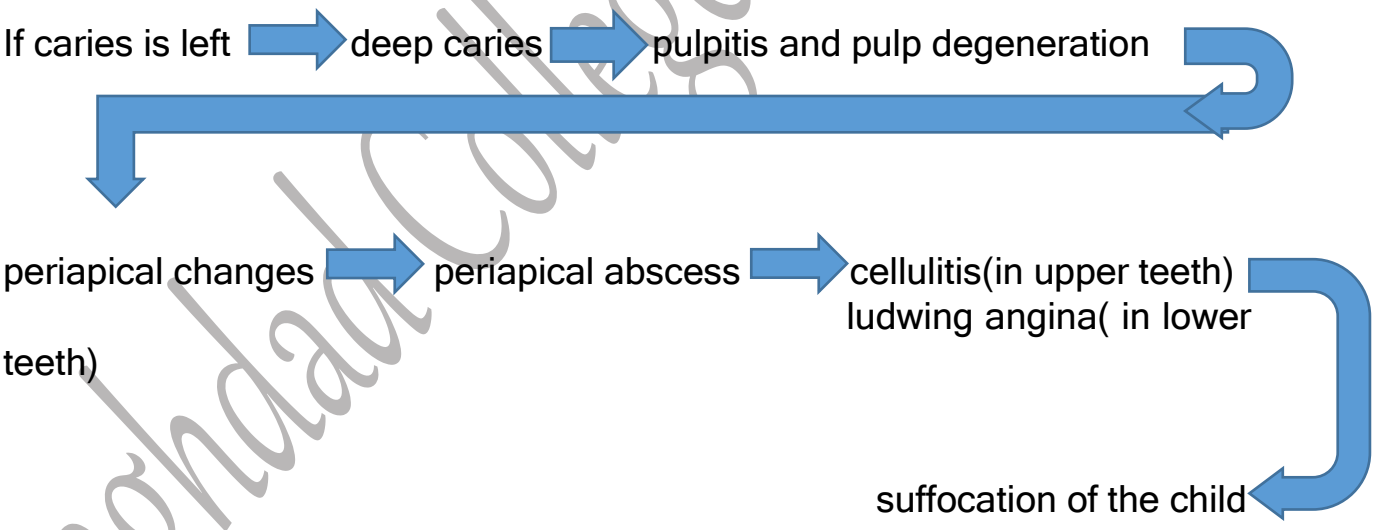
1) The root of the deciduous anterior tooth is narrower mesiodistally than is that of the permanent anterior tooth.
2) The roots of the posterior deciduous tooth are longer and more slender in relation to crown size than are those of the permanent tooth. i.e., mandibular molar roots are narrower mesiodistally, maxillary MB and DB roots are narrower mesiodistally, and maxillary palatal roots are narrower buccolingually.
3) The roots of the deciduous molar flare more as they approach the apex (which affords the necessary room for the development of the permanent tooth buds) than do the permanent molar roots.

Functions of Primary Teeth

- ✓ Mastication
- ✓ Phonetic
- ✓ Stimulate the growth of the jaw
- ✓ Space maintainer for the permanent teeth
- ✓ Stimulate path of eruption for the permanent teeth
- ✓ Psychology of the child
- ✓ Keep the height of occlusion

Why we treat the primary teeth?

- ✓ Keep the functions of primary teeth in actin
- ✓ Get rid of pain
- ✓ Avoid any complications as that associated with infection



Clinical consideration of difference of morphology of primary and permanent teeth:

1) Type of treatment plane; e.g. extraction of primary tooth before its shedding time will lead to loss of space for the permanent teeth while extraction of permanent teeth will lead to its lost forever.
2) General health and /or presence of any systemic disease may cause delay in eruption
3) The length of time that tooth remained in its position is important mainly for orthodontic treatment.
4) Consideration for cavity preparation

Tooth	Hard Tissue Formation Begins	Amount of Enamel Formed at Birth	Enamel Completed	Eruption	Root Completed
Deciduous dentition					
Maxillary					
Central incisor	4 mo in utero	Five sixths	1½ mo	7½ mo	1½ yr
Lateral incisor	4½ mo in utero	Two thirds	2½ mo	9 mo	2 yr
Cuspid	5 mo in utero	One third	9 mo	18 mo	3¼ yr
First molar	5 mo in utero	Cusps united	6 mo	14 mo	2½ yr
Second molar	6 mo in utero	Cusp tips still isolated	11 mo	24 mo	3 yr
Mandibular					
Central incisor	4½ mo in utero	Three fifths	2½ mo	6 mo	1½ yr
Lateral incisor	4½ mo in utero	Three fifths	3 mo	7 mo	1½ yr
Cuspid	5 mo in utero	One third	9 mo	16 mo	3¼ yr
First molar	5 mo in utero	Cusps united	5½ mo	12 mo	2¼ yr
Second molar	6 mo in utero	Cusp tips still isolated	10 mo	20 mo	3 yr

Tooth	Hard Tissue Formation Begins	Amount of Enamel Formed at Birth	Enamel Completed	Eruption	Root Completed
Permanent dentition					
Maxillary					
Central incisor	3-4 mo		4-5 yr	7-8 yr	10 yr
Lateral incisor	10-12 mo		4-5 yr	8-9 yr	11 yr
Cuspid	4-5 mo		6-7 yr	11-12 yr	13-15 yr
First bicuspid	1½-1¾ yr		5-6 yr	10-11 yr	12-13 yr
Second bicuspid	2-2¼ yr		6-7 yr	10-12 yr	12-14 yr
First molar	At birth	Sometimes a trace	2½-3 yr	6-7 yr	9-10 yr
Second molar	2½-3 yr		7-8 yr	12-13 yr	14-16 yr
Third molar	7-9 yr		12-16 yr	17-21 yr	18-25 yr
Mandibular					
Central incisor	3-4 mo		4-5 yr	6-7 yr	9 yr
Lateral incisor	3-4 mo		4-5 yr	7-8 yr	10 yr
Cuspid	4-5 mo		6-7 yr	9-10 yr	12-14 yr
First bicuspid	1¾-2 yr		5-6 yr	10-12 yr	12-13 yr
Second bicuspid	2¼-2½ yr		6-7 yr	11-12 yr	13-14 yr
First molar	At birth	Sometimes a trace	2½-3 yr	6-7 yr	9-10 yr
Second molar	2½-3 yr		7-8 yr	11-13 yr	14-15 yr
Third molar	8-10 yr		12-16 yr	17-21 yr	18-25 yr