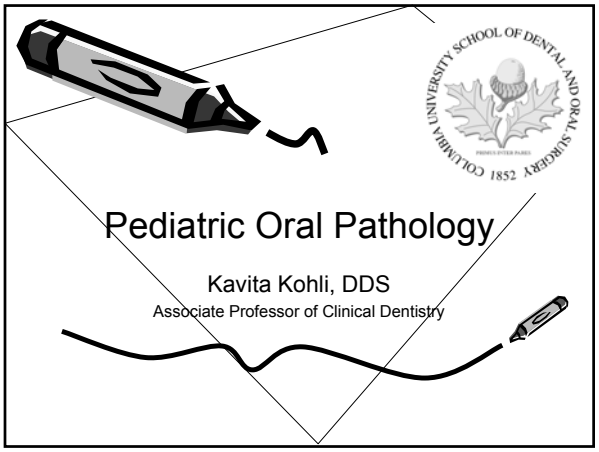


Pediatric Oral Pathology

Kavita Kohli, DDS
Associate Professor of Clinical Dentistry

Topics

- Newborn lesions
- Infections
- Ulcerative and vesiculobullous lesions
- Pigmented, vascular and red lesions
- Exophytic lesions
- Gingival Enlargements

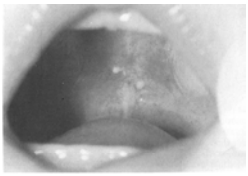
Lesions in Newborns

- D/D
  - Keratin Cysts
  - Congenital Epulis
  - Natal/Neonatal Teeth

Keratin Cysts of the Newborn

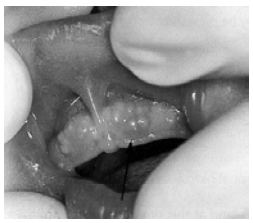
- Epstein's pearls
- Bohn's nodules
- Dental Lamina cyst

Epstein's Pearls



- Hard, raised small nodules
- Arise from epithelial remnants trapped along lines of fusion of embryological processes.
- Appear in the midline of the hard palate, mainly in the posterior section.
- Tx - no treatment.

Bohn's Nodules



- Ectopic mucous glands.
- Small keratinizing cysts.
- Usually seen on the labial aspects of the maxillary alveolar ridges.
- Tx - no treatment.

Dental Lamina Cyst

- Usually seen on the crest of the alveolus
- Remnants of the dental lamina.
- Tx - no treatment.

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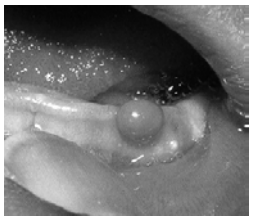
Congenital Epulis of the Newborn



- Relatively rare, seen in neonates(at birth), of unknown origin, with proliferation of mesenchymal cells.
- Equal distribution between mx and md.
- Females > males.
- Usually firm, pedunculated,pink, smooth, solitary.
- Tx - often regress with time, but may need to be excised, recurrence is uncommon.

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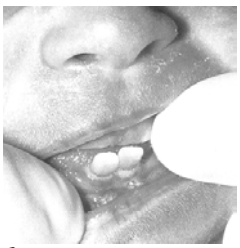
Natal/Neonatal Teeth



- Natal - seen present at birth.
- Neonatal - seen within 30 days of birth.
- In almost all cases it is the early eruption of a primary incisor.
- Usually only 5/6th of the crown is formed and the mobility arises from no root development.
- Tx - nursing issues, firms up as root develops, may be extracted if aspiration a possibility.

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Oral Infections

- D/D -
  - Bacterial
  - Viral
  - Fungal

Bacterial Infections

- Odontogenic
- *Scarlet fever*
- *Tuberculosis*
- *Atypical mycobacterial infection*
- *Actinomycosis*
- *Syphillis*
- *Impetigo*
- Osteomyelitis

Odontogenic Infections

- Acute - sick child, raised temp., red swollen face.
- Chronic - sinus tract present, mobile and/or discolored tooth, halitosis.
- Tx -
  - remove the cause and local drainage and debridement,
  - May admit if spikes in temp. seen, facial space involvement suspected or seen &/or dehydrated.
  - Antibiotics - only if systemic involvement seen, or if child is immunocompromised. Pen family first drug of choice.

Osteomyelitis

- Some times an odontogenic infection can lead to osteomyelitis in the mandible.
- Radiographically - moth eaten appearance.
- Tx - curettage to remove bony sequestra, antibiotics (after culture and sensitivity test) for at least 6 weeks.

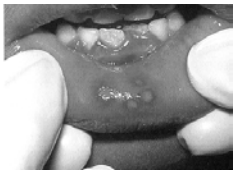
Viral Infections

- Primary herpetic gingivostomatitis
- Herpes labialis
- Herpangina
- Hand, foot and mouth disease
- Infectious mononucleosis
- Varicella

Primary Herpetic Gingivostomatitis

- Most common cause of severe oral ulcerations in children over the age of 6 mos (peaks at 14 mos).
- Caused by Herpes Simplex Type 1.
- Incubation period of 3-5 days with a prodromal 48 hour h/o irritability, lymphadenopathy, pyrexia and malaise.
- Stomatitis seen, with gingival tissues become red and edematous.
- Vesicles seen any where on oral mucosa and rapidly break down to form very painful ulcers. Solitary ulcers (<3mm) seen and some times larger ulcers with irregular margins are seen when there is coalescence of individual lesions.
- Self limiting and ulcers heal spontaneously without scarring within 10-14 days.

Primary Herpetic Stomatitis



- Exfoliative cytology, direct immuno-fluorescence, viral culture can be done to aid diagnosis.
- Tx - symptomatic care, encourage hydration, pain management, chlorhexidine rinse or swabs on lesion, topical anesthetics , antiviral therapy and may require hospitalization.

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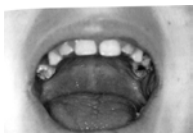
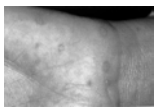
Herpangina and Hand, foot and mouth disease





- Caused by the Coxsackie grp A viruses, usually seen in the summer months in young children.
- Prodromal phase that lasts for several days before appearance for vesicles (Herpangina - 4-5 vesicles, HFM - up to 10 vesicles).
- Commonly seen on palate, pillars of the fauces and pharynx and other sites (hand and foot), malaise, fever.
- Milder than herpes , healing in 10 days.
- Tx - symptomatic care.

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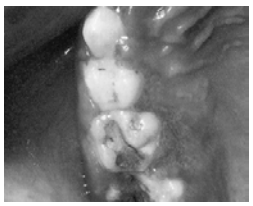
Infectious Mononucleosis



- Caused by EBV and usually seen in late adolescents and young adults.
- Highly infective.
- Malaise, fever and acute pharyngitis.
- In children, ulcers and petechia often seen in the posterior pharynx and soft palate.
- Tx - self limiting.

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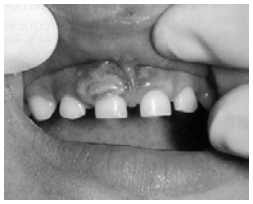
Varicella



- Highly contagious virus.
- Seen as chicken pox in children and as shingles in adults.
- Prodromal phase of malaise and fever for 24 hours, followed by crops of pruritic vesicles.
- 50% of children have oral lesions.
- Tx - self limiting, resolves in 7-10 days, supportive and palliative.

Fungal Infections

- Candidiasis
  - Common oral organism, but usually does not cause infection unless host is immunocompromised.
  - Acute pseudomembranous - in infants seen as Thrush. White scrapable plaques that reveal an erythematous base. In older children, seen in immunocompromised ones who are under active treatment - like CT, RT, broad spectrum ab.'s and steroids.
  - Median rhomboid glossitis - seen on dorsal surface of the tongue (usually anterior to the vallate papillae). Can be a response to broad spectrum ab.'s.
- Tx - antifungal for 4 weeks (Nystatin, Ampho B, Fluconazole or Ketoconazole.

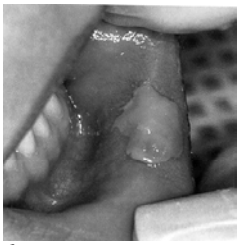
Ulcerative and Vesiculobullous Lesions

- D/D -
  - Traumatic
  - Infective (already discussed)
  - Others

Traumatic lesions

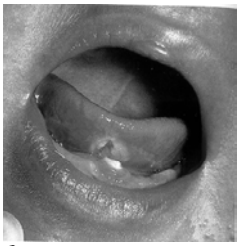
- Self induced post-anesthetic trauma
- Riga-Fed`e ulceration

Self induced post-anesthetic trauma



- Most common cause of traumatic ulcers.
- Usually seen in children who have received their first local anesthetic injection.
- Parents should be warned and children must be reminded not to bite their lips, cheeks etc.

Riga Fed`e ulceration



- Ulceration of the ventral surface of the tongue of an infant or child.
- Can be seen in children with natal/neonatal teeth and those with CP or comatosed.
- Tx - smoothen sharp incisal edges or place domes of composite over the teeth, rarely may need to extract teeth.

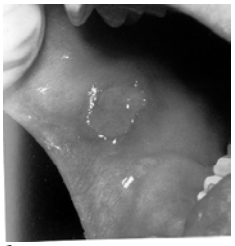
Others

- Recurrent aphthous ulceration
- *Erythema multiforme*
- *Stevens-Johnson syndrome*
- *Behcets syndrome*
- *Epidermolysis bullosa*
- *Lupus erythematosus*
- *Neutropenic ulceration*

Recurrent aphthous ulceration

- Estimated to affect up to 20% of the population.
- Seems to have a genetic predisposition, cause unknown
- 3 types -
  - Minor aphthae - majority of cases, crops of shallow ulcers up to 5mm, non-keratinized mucosa, typical yellow pseudomebranous slough with an erythematous border.
  - Major aphthae - involves the kertinized mucosa, larger ulcers, last longer.
  - Herpetiform ulceration

Recurrent aphthous ulceration



- Tx - symptomatic care w/ mouth rinses (chlorhexidine, tetracycline,benzydamine hydrochloride, benadryl, xylocaine), heals within 10-14 days without scarring for minor, but with scarring in major.

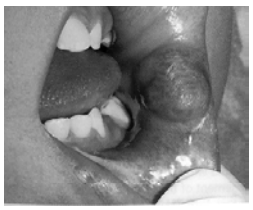
Pigmented, Vascular and Red lesions

- D/D -
  - Vascular
  - Pigmented
  - Others

Vascular Lesions

- Hemangioma
- *Other vascular malformations*
- *Hematoma*
- Petechiae and purpura
- *Hereditary haemorrhagic telangiectasia*
- *Sturge-Weber syndrome*
- *Maffuci's syndrome*

Hemangioma



- Endothelial hamartomas,
- Typically present at birth, may grow with the infant, but then regress with time and may even completely disappear
- Tx - none required other than observation, may be a cosmetic concern.

Petechiae and Purpura

- Petechiae - small pinpoint submucosal or subcutaneous hemorrhages.
- Purpura or ecchymoses present as larger collections of blood.
- Usually seen in patients with severe bleeding disorders or coagulopathies, leukemia etc.
- Initially bright red in color, change to a bluish-brown hue with time as the extravasated blood is metabolized.

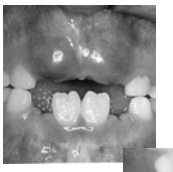
Pigmented lesions

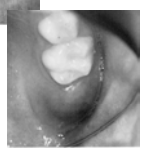
- *Melanotic neuroectodermal tumor of infancy*
- *Peutz-Jeghers Syndrome*
- *Addision's disease*

Other Red lesions

- *Giant cell epulis/peripheral giant cell granuloma*
- Eruption cyst
- *Langerhans cell histiocytosis*
- Geographic tongue
- Fissured tongue
- Median rhomboid glossitis - already discussed
- *Heavy metal toxicity*

Eruption Cyst or hematoma





- Follicular enlargement appearing just before the eruption of tooth.
- Blue-black in color (may contain blood).
- Tx - none unless infected, reassure the child and parent, follicle will rupture, but may need to surgically opened if infected.

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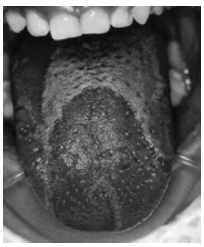
Geographic tongue



- Also known as glossitis migrans, benign migratory glossitis, erythema migrans or wandering rash of the tongue.
- Areas of depapillation and erythema with a heaped up keratinized margin on the lateral and dorsal surface of the tongue - map like area that changes.
- Tx - none, may prescribe chlorhexidine mouthwash and/or topical steroids when child in pain

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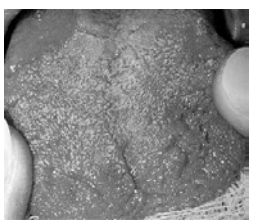
Fissured Tongue



- Also known as plicated tongue, scrotal tongue, fissured tongue or lingua secta.
- Usually see fissures that run perpendicular to the lateral borders
- Commonly seen in children w/ Downs.
- About 20% will also have geographic tongue or associated c/ Melkersson-Rosenthal Syndrome.
- Tx - none

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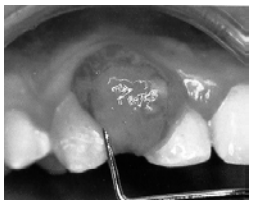
Exophytic Lesions

- D/D -
  - Inflammatory
  - Congenital epulis of newborn
  - Squamous papilloma
  - Viral Warts
  - Eruption cysts/hemtomas

Inflammatory Hyperplasias

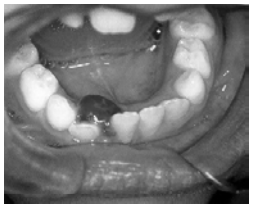
- Fibrous Epulis
- Giant cell epulis/peripheral giant cell granuloma

Fibrous Epulis



- Most common exophytic lesion, also called fibroma and pyogenic granuloma if infected.
- Usually an unusual response to plaque.
- Commonly seen on interdental papillae, usually pink (red -yellow).
- Can be firm or soft
- Tx - improvement of oral hygiene, removal of irritant, surgical excision, can reoccur.

Giant Cell epulis/peripheral giant cell granuloma



- Occur in the primary dentition, well circumscribed, sessile noduleous nodule, often ulcerated and hemorrhagic.
- Color usually dark purple - "liver colored", alveolar bone loss seen as cupping in the radiograph.
- D/d - central giant cell if intra osseous lesions.
- Tx -surgical excision, watch for recurrence.

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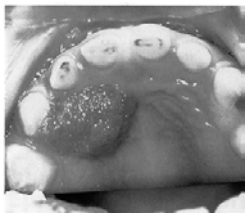
Squamous papilloma



- True benign tumor.
- Cauliflower-like growth on the mucosa.
- Color depends on degree of keratinization.
- Clinically hard to distinguish from a viral wart.
- Tx - surgical excision, including the stalk and normal border tissue.

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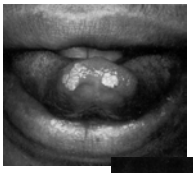
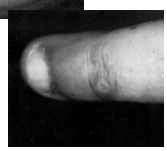
Viral Warts





- Viral infection of the human papilloma virus.
- May be multiple or single.
- Look for warts on other areas of the body, especially hands and fingers.
- Surgical excision, extra-oral lesions may need to be managed by a dermatologist.

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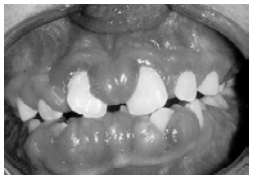
Gingival Enlargements

- D/D -
  - Drug induced hyperplasias
  - Syndromes

Drug Induced Hyperplasia

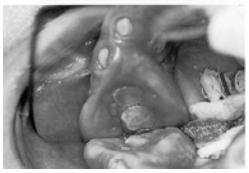


- Phenytoin
- Cyclosporin A
- Nifedipine
- verapamil

Drug Induced Gingival Enlargements

- Phenytoin
  - Interdental papillae, may be delayed eruption due the bulk of fibrous tissue, ectopic eruption, withdrawal of drug will bring about resolution in most cases.
  - Tx - oral hygiene key in control of overgrowth, chlorhexidine mouthwash, gingivectomy to allow for eruption and esthetics.
- Cyclosporin A
  - H/o liver, kidney, heart and combined heart/lung transplants. most commonly used med for anti-rejection, seen in about 30-70% of these cases.
- Nifedipine and verapamil
  - Both are calcium channel blockers, used to control cyclosporin induced hypertension after transplants in children.
  - Tx - oral hygiene and gingivectomy.

Syndromes with gingival enlargement



- Hereditary gingival fibromatosis
  - May be associated with intellectual disabilities
  - May be sporadic in occurrence or an AD or AR trait.
  - Tx - gingivectomy or perio flaps to allow for eruption, maintain esthetics
- Others e.g.: Leukemia.

References

- Handbook of Pediatric Dentistry, 2nd ed. by Cameron and Widmer.
- Dentistry for the Adolescent and child, 7th ed. by McDonald and Avery.
- Oral and Maxillofacial Pathology by Neville, Damn, Allen and Bouquot.
- The Handbook, 2nd ed., AAPD.