Pediatric Oral Pathology

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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

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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.

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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.

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.

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.
Oral Infections

• D/D -
  – Bacterial
  – Viral
  – Fungal

Bacterial Infections

• Odontogenic
• Scarlet fever
• Tuberculosis
• Atypical mycobacterial infection
• Actinomycosis
• Syphilis
• 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

- Sometimes 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.

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.

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.
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, Amphotericin 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 comatose.
- 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

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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 pseudomembranous slough with an erythematous border.
  - Major aphthae - involves the keratinized mucosa, larger ulcers, last longer.
  - Herpetiform ulceration

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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.

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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
- Maffucci’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
- Addison’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.

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

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
Exophytic Lesions

• D/D -
  – Inflammatory
  – Congenital epulis of newborn
  – Squamous papilloma
  – Viral Warts
  – Eruption cysts/hematomas

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.

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.

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.
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 to 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
  - History in 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 periop flaps to allow for eruption, maintain esthetics
• Others e.g.: Leukemia.

References

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