

Odontogenic Infections

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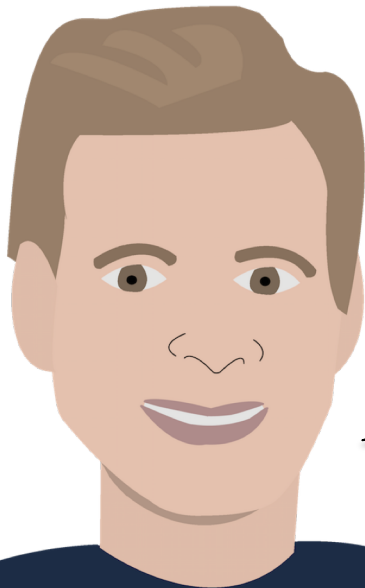
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Disclosures

- No financial conflicts of interest
- Everything we discuss is QI, thus protected from legal discovery under WA State Code



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Question...

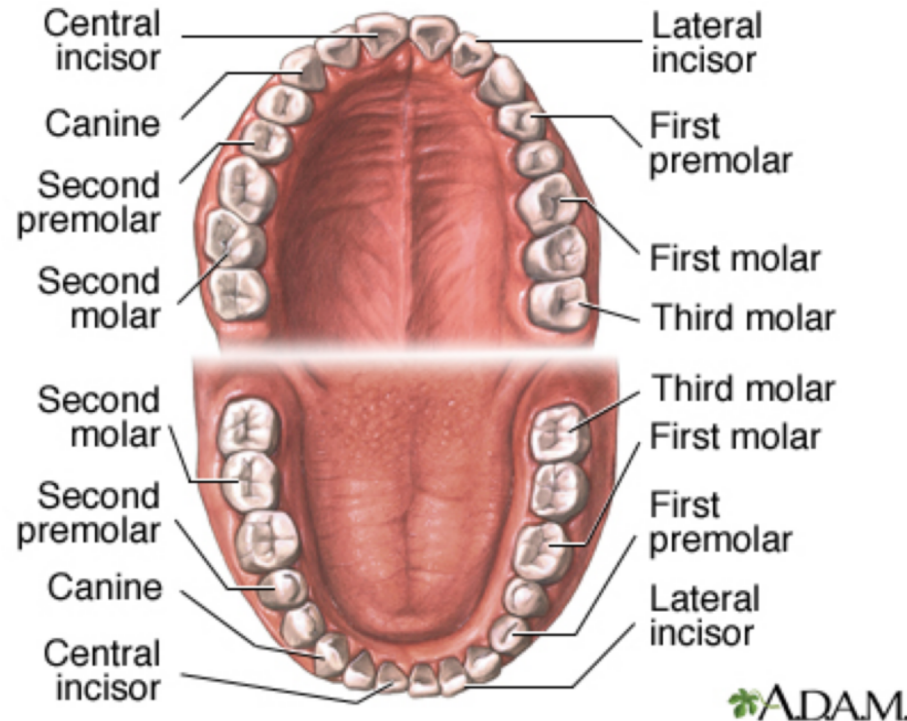
What do you think of when we say “odontogenic?”



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- A. Era that came before paleolithic
- B. Docs who apply kid's braces
- C. A kind of mammoth
- D. Arising from the teeth

Odontogenic: *What's In a Name?*



“Arising from teeth or the closely surrounding tissues.”

Odontogenic Infections: *Burden*



Odontogenic Infections: *Burden*

Major Public Health Failure

25% of Americans have no teeth by age 60!

- Half due to caries
- Half due to periodontal disease

Many factors contribute

- Diet; Genetics; Autoimmune Dz
- Underinsurance; Tobacco; EtOH; Meth
- Dental dz is a socioeconomic dz

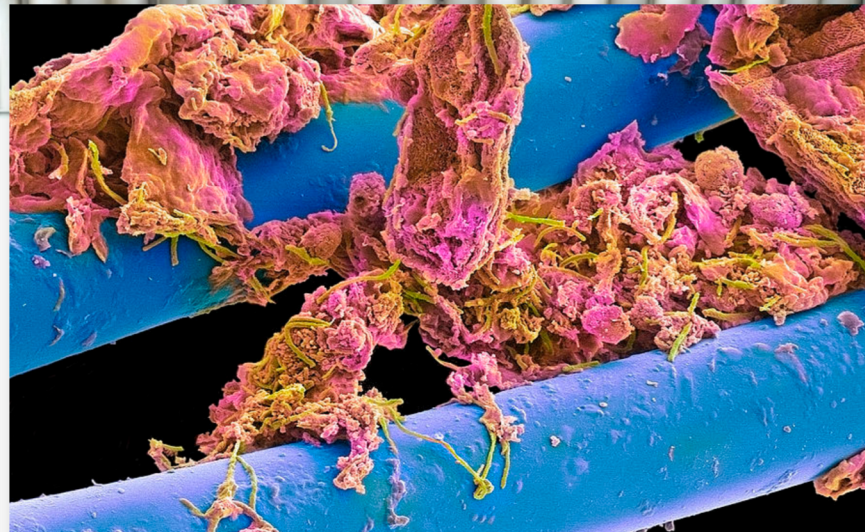
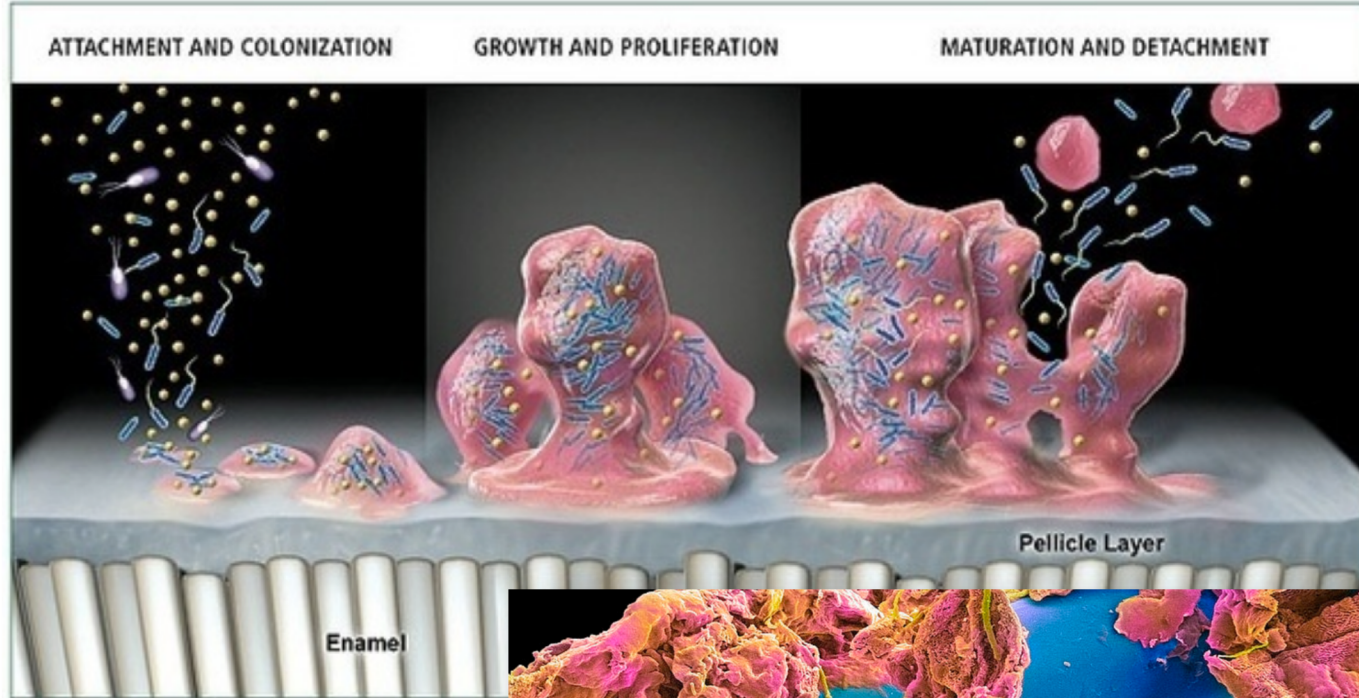
Implications BEYOND teeth



Albandar 1999

Beltran-Aguilar 2005

Odontogenic Infections: *Pathophysiology*



Odontogenic Infections: *Microbiology*

Hundreds of microbial spp identified in normal human mouth...

Predominant cultivable flora from various sites of the oral cavity

Group	Predominant genus or family	Total viable count (mean percent)			
		Tongue	Saliva	Gingival crevice	Dental plaque
Anaerobes (1011 CFU/g)*					
Gram + cocci	<i>Peptostreptococcus</i>	4.2	13.0	7.4	13.0
Gram - cocci, Gram + rods	<i>Veillonella</i>	16.0	15.9	10.7	6.0
	<i>Actinomyces, Eubacterium, Lactobacillus, Leptotrichia</i>	7.4	4.8	20.2	18.0
Gram - rods	<i>Fusobacterium, Bacteroides, Prevotella, Porphyromonas</i>	8.2	4.8	16.1	10.0
Aerobes (1010 CFU/g)*					
Gram + cocci	<i>Streptococcus</i>	44.8	46.2	28.8	28.0
Gram - cocci	<i>Moraxella</i>	3.4	1.2	0.4	0.4
Gram + rods	<i>Lactobacillus, Corynebacterium</i>	13.0	11.8	15.3	24.0
Gram - rods	<i>Enterobacteriaceae</i>	3.2	2.3	1.2	Not done

* Total viable colony-forming units per g net weight.

Modified from Chow, AW, Roser, SM, Brady, FA, Ann Intern Med 1978; 88:392.

Odontogenic Infections: *Microbiology*



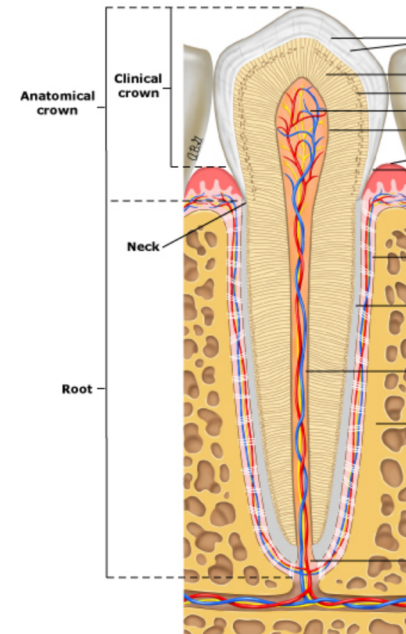
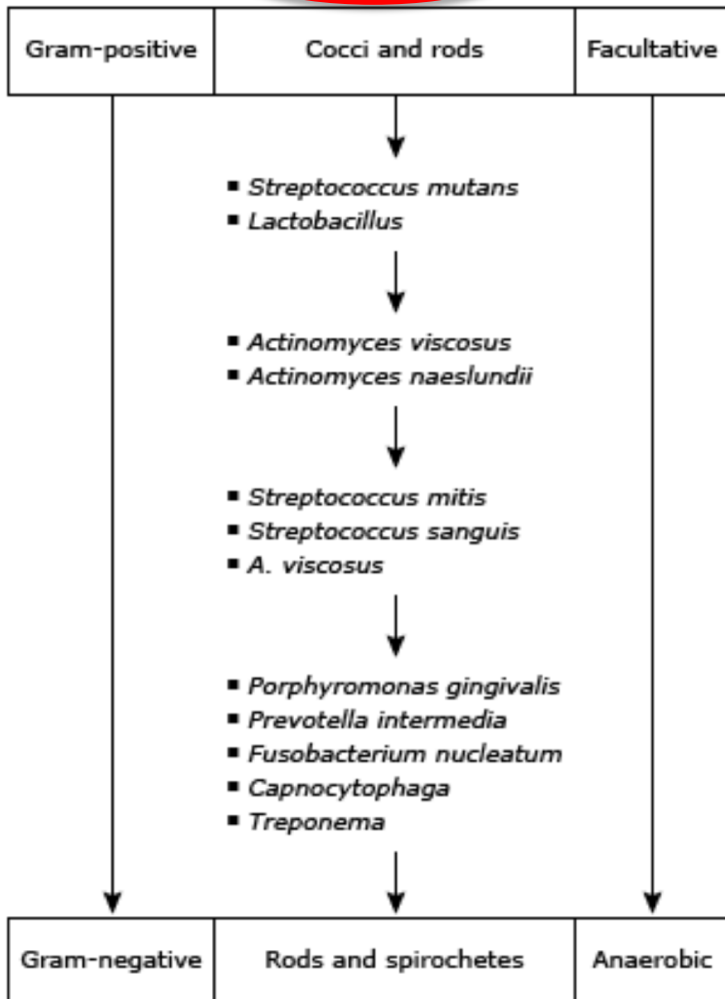
► Debarking Pet Myths

A DOG'S MOUTH IS CLEANER THAN A HUMAN'S

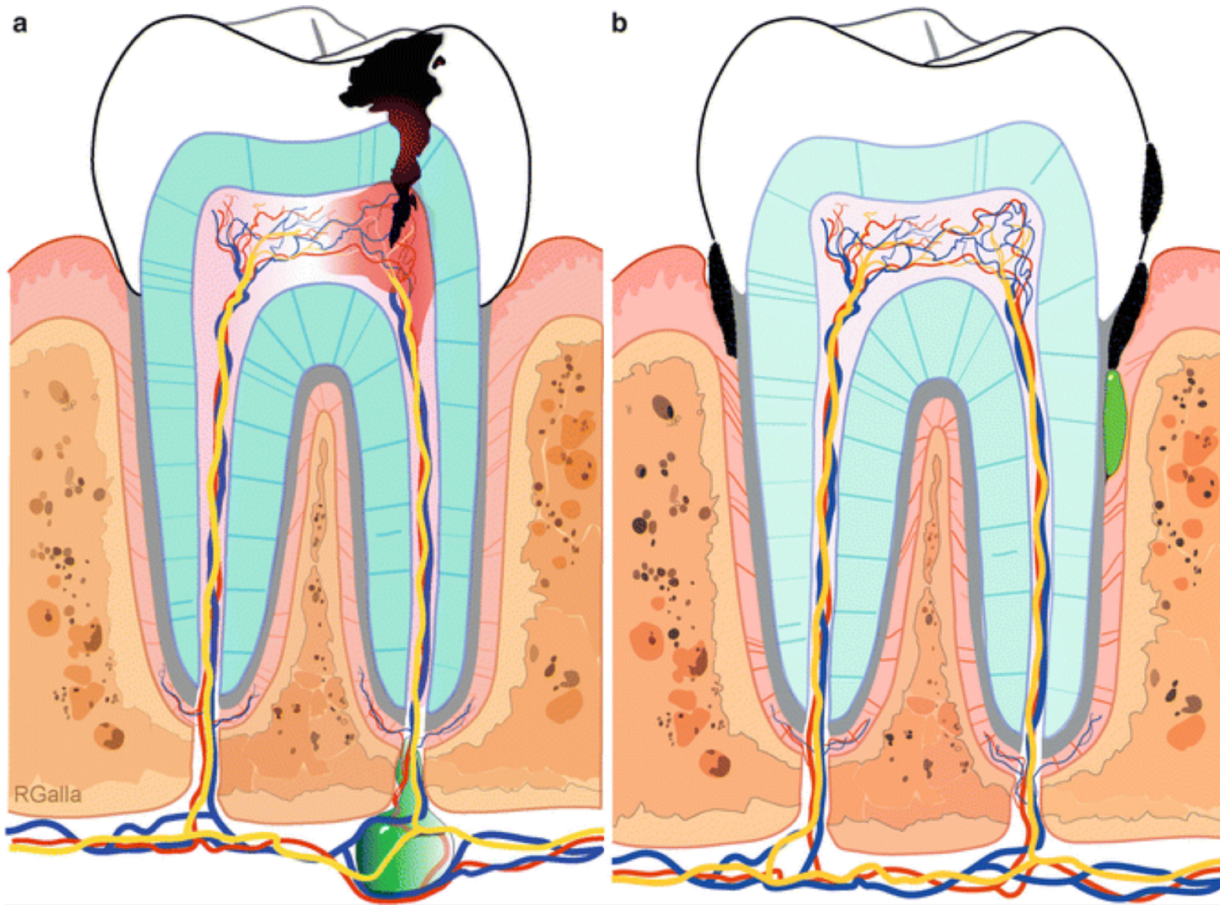


Odontogenic Infections: *Microbiology*

Microbial shift



Odontogenic Infections: *Local Disease*



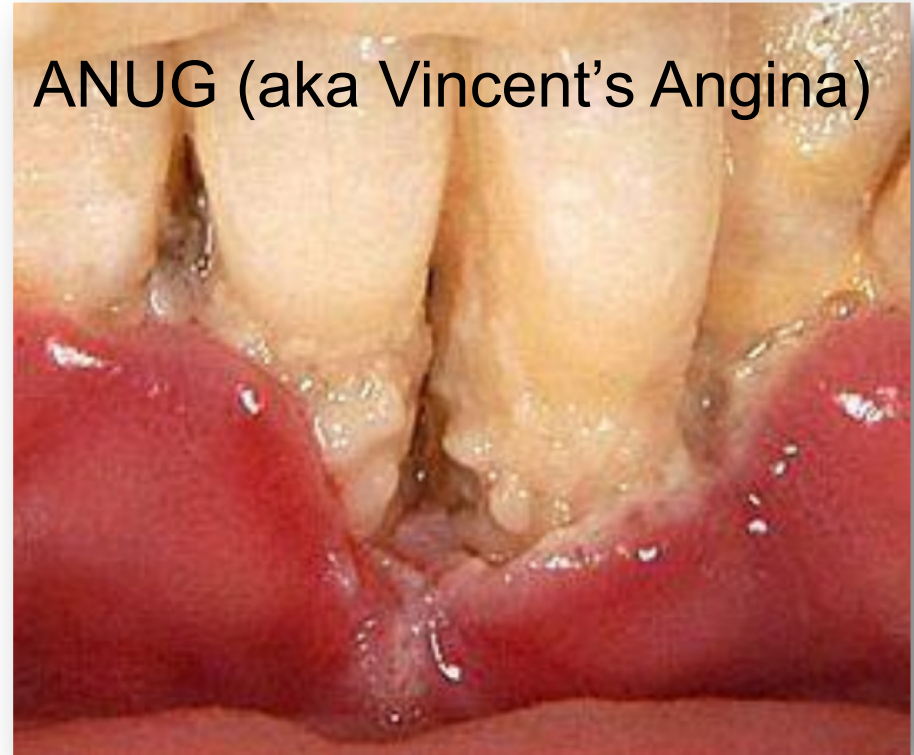
Carie, pulpitis,
periapical abscess

Carie, gingivitis, periodontal
abscess

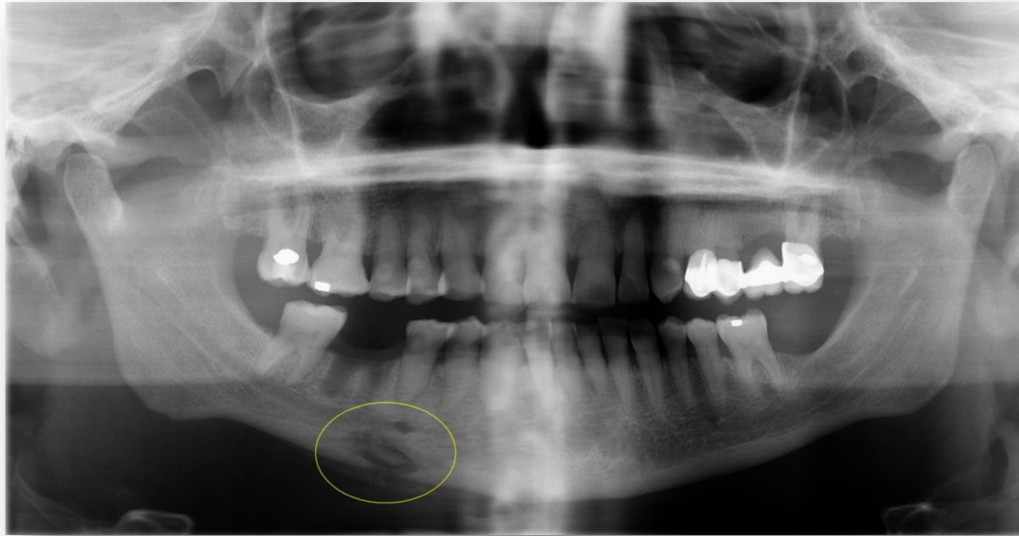
Odontogenic Infections: *Local Disease*

Periodontal Disease:
Gum loss threatens tooth
viability

Rx: Amox-Clav
or Clinda
or PCN + metro



Odontogenic Infections: *Spreading...*



Mandibular osteo

Debride it!

Rx based on micro:

Doxy... Clinda... parenteral
beta-lactam?



Ludwig's Angina

Drain it!

Rx: Amox-Clav

or Clinda

or PCN + metro

Odontogenic Infections: *Spreading Farther...*

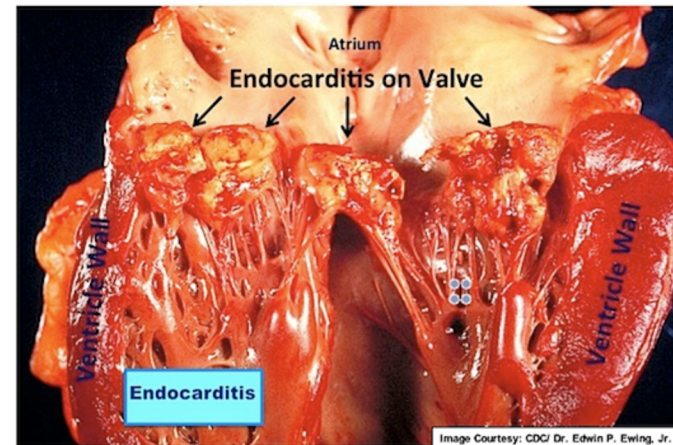
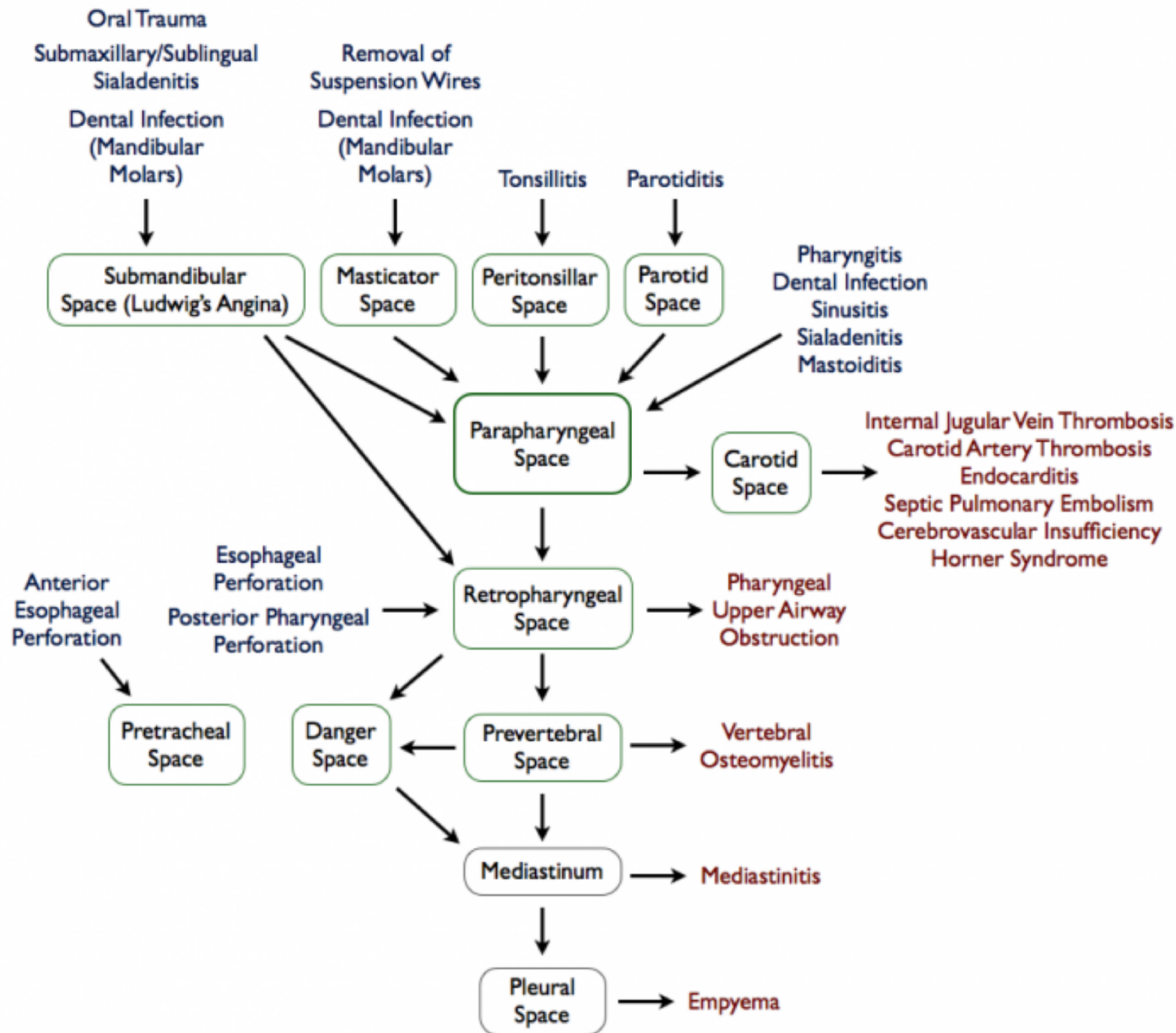


Image Courtesy: CDC/ Dr. Edwin P. Ewing, Jr.

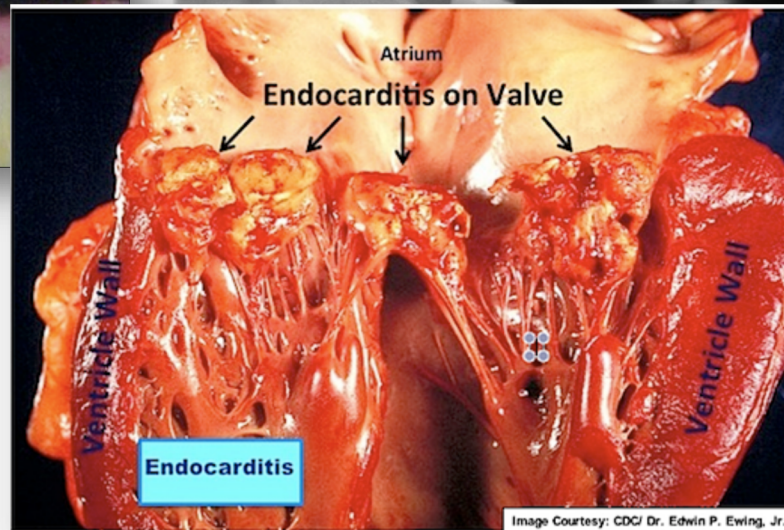
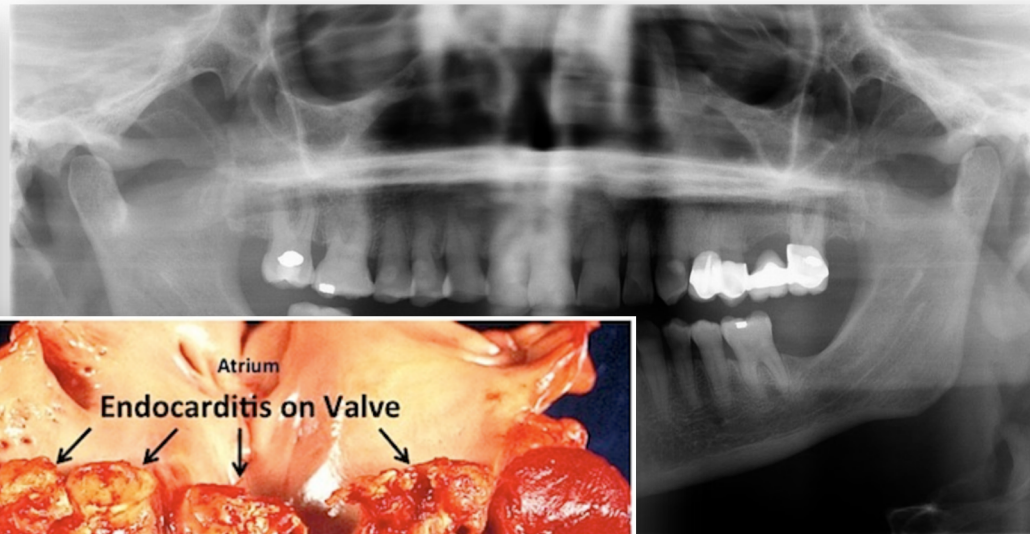
Odontogenic Infections: *Pearl #1*

Examine the patient's mouth *every time!*



Odontogenic Infections: *Pearl #2*

Make a diagnosis... or at least a referral if unsure. Rx varies greatly, depending on extent and severity of infection



Odontogenic Infections: *Pearl #3*

Treat infections limited to the mouth with amox-clav if possible.
“PCN allergic?” Figure it out!

- ✓ WHAT?
(Airway? Intubation? Itching? “Hives”
used differently by many folks)
- ✓ WHEN?
(Relation to dose? >10 years ago?)
- ✓ WHO?
(Witnessed, recorded, historical?)
- ✓ *Beware* shibboleths in the EMR!



Odontogenic Infections: *Pearl #4*

Truly PCN allergic but got mouth infection?

- ✓ Clindamycin usually next best
(Most strep and oral anaerobes...
misses *Eikenella*... CDI risk)
- ✓ Regardless of drug chosen: Pt needs
reliable referral to dentist vs oral
surgeon
- ✓ *Duration will depend on response...
often a very short course advised by
oral medicine*





Odontogenic Infections: *Conclusions*



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1. A major public health crisis
2. May have implications well beyond the teeth themselves!
3. Prevention is key...
4. When treatment needed, “PCN allergy” should be sussed out!

Odontogenic Infections: *References*

1. Albandar JM et al. Destructive periodontal disease in adults 30 years of age and older in the United States, 1988-1994. *J Periodontol* 1999; 70:13.
2. Beltrán-Aguilar ED et al. Surveillance for dental caries, dental sealants, tooth retention, edentulism, and enamel fluorosis--United States, 1988-1994 and 1999-2002. *MMWR Surveill Summ* 2005; 54:1.
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