

# ODONTOGENI C INFECTIONS

دکتر بی گناه



سورة التين





**Table 16-2 Major Pathogens in Odontogenic Infections**

<b>Microorganism</b>	<b>PERCENT OF CASES</b>	
	<b>Sakamoto et al.* (1998)</b>	<b>Heimdahl et al.† (1985)</b>
<i>Streptococcus milleri</i> group	65	31
<i>Peptostreptococcus</i> species	65	31
Other anaerobic streptococci	9	38
<i>Prevotella</i> species (e.g., <i>P. oralis</i> and <i>P. buccae</i> )	74	35
<i>Porphyromonas</i> species (e.g., <i>P. gingivalis</i> )	17	—
<i>Fusobacterium</i> species	52	45

\*Data from Sakamoto H, Kato H, Sato T, Sasaki J. Semiquantitative bacteriology of closed odontogenic abscesses. *Bull Tokyo Dent Coll* 39:103–107, 1998.

†Heimdahl A, Von Konow L, Satoh T, et al: Clinical appearance of orofacial infections of odontogenic origin in relation to microbiological findings. *J Clin Microbiol* 22:299, 1985.

**Table 16-3 Comparison of Edema, Cellulitis, and Abscess**

<b>Characteristic</b>	<b>Edema (Inoculation)</b>	<b>Cellulitis</b>	<b>Abscess</b>
Duration	0–3 days	1–5 days	4–10 days
Pain, borders	Mild, diffuse	Diffuse	Localized
Size	Variable	Large	Smaller
Color	Normal	Red	Shiny center
Consistency	Jelly-like	Boardlike	Soft center
Progression	Increasing	Increasing	Decreasing
Pus	Absent	Absent	Present
Bacteria	Aerobic	Mixed	Anaerobic
Seriousness	Low	Greater	Less

## Table 16-1 Role of Anaerobic Bacteria in Odontogenic Infections

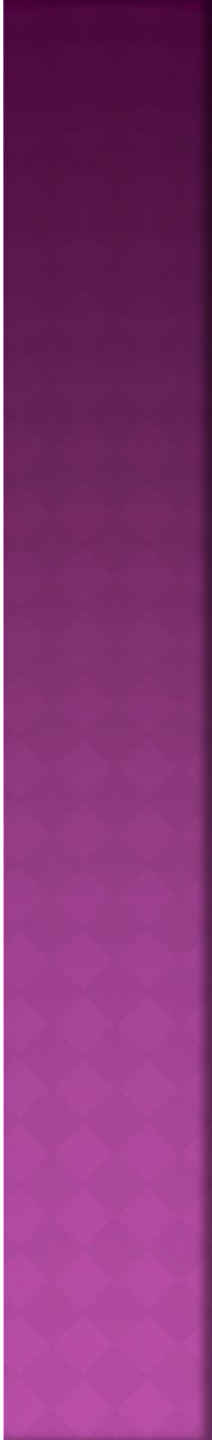
	Percentage
Anaerobic only	50
Mixed anaerobic and aerobic	44
Aerobic only	6

Data from Brook I, Frazier EH, Gher ME: Aerobic and anaerobic microbiology of periapical abscess. *Oral Microbiol Immunol* 6:123–125, 1991.













# Odontogenic abscesses





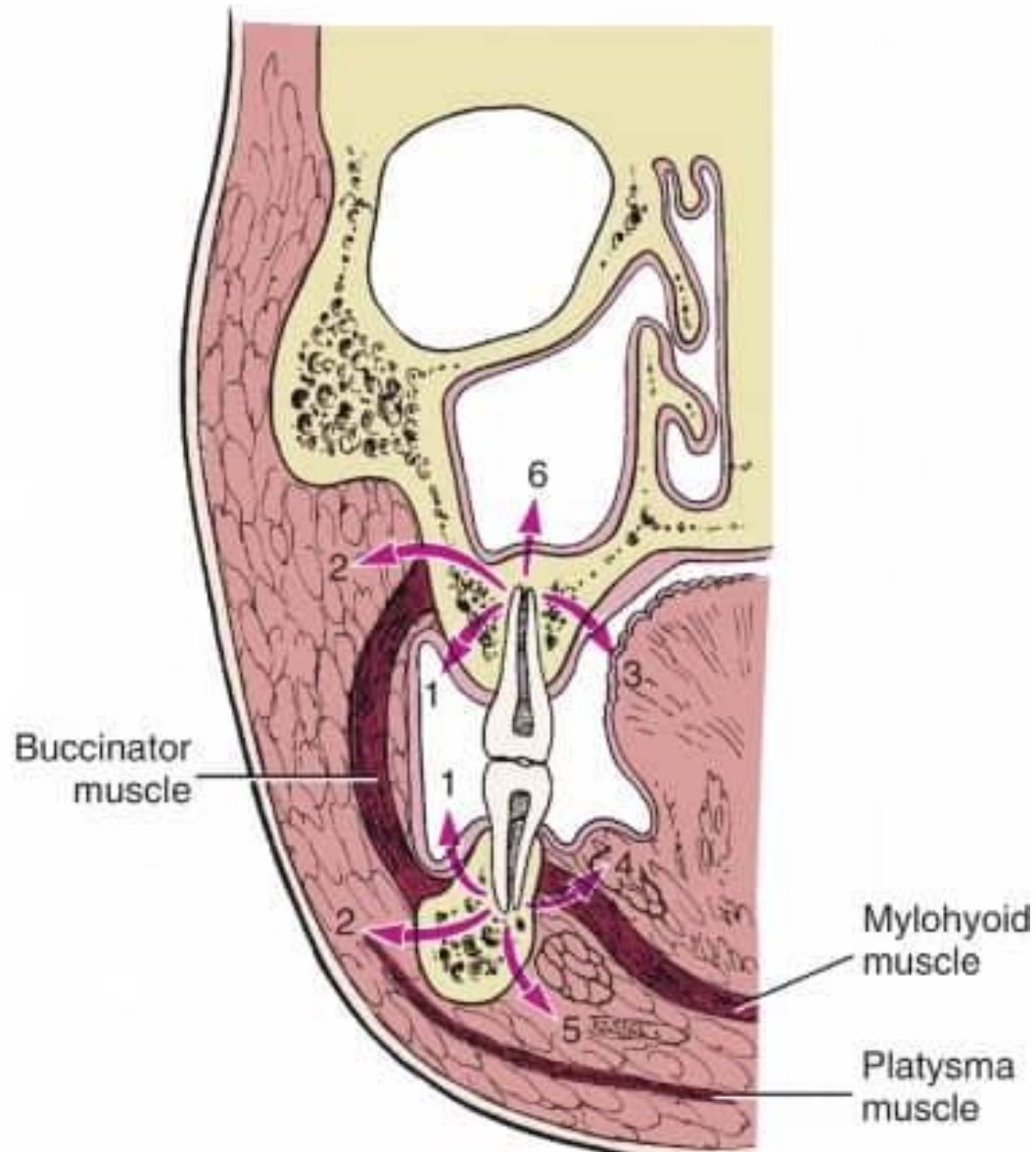


Figure 16-3 Lateral abscess arising from the apical root of a maxillary first premolar.



Figure 16-4 Vestibular abscess arising from maxillary incisor. Overlying mucosa is thin because pus is near the surface. (From Figure 16. Anatomy of oral and maxillofacial infections. In Topical EG, Goldberg NH, Hupp JR, editors. Oral and maxillofacial infections, ed 4. Philadelphia, PA, 2002. WB Saunders.)

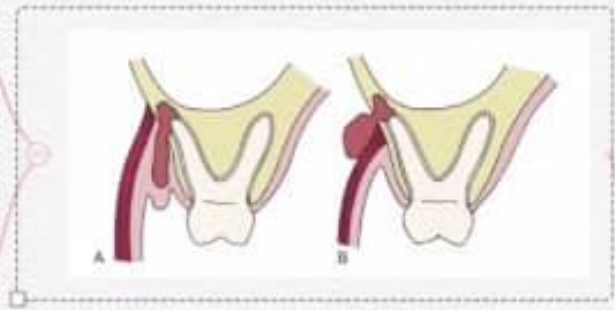
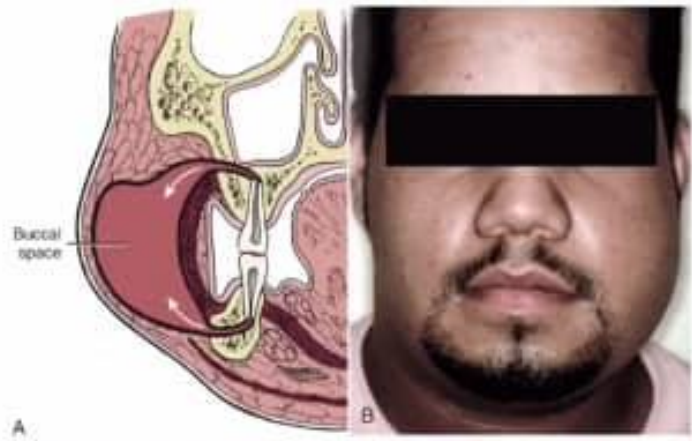






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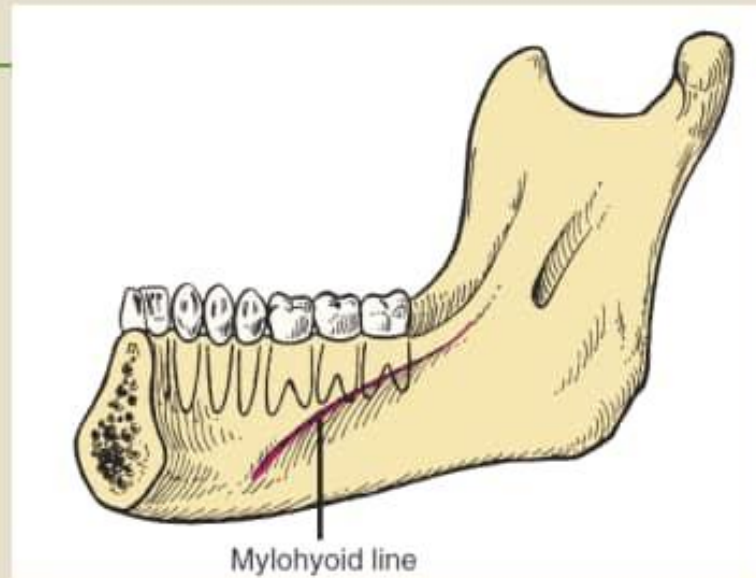






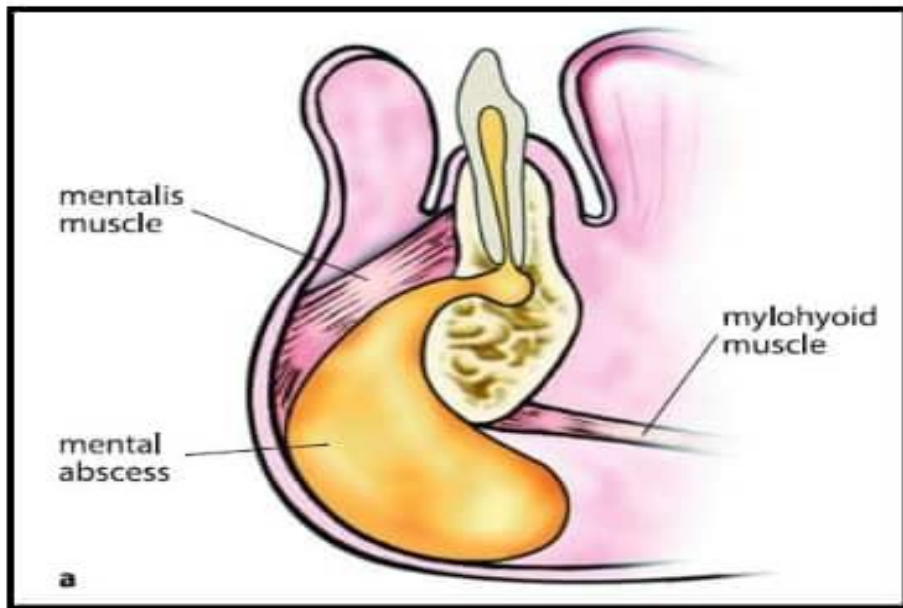


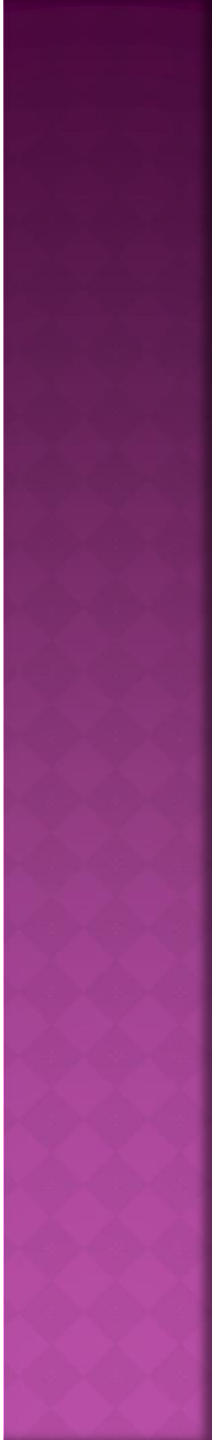
# Mylohyoid Ridge



Mylohyoid line

# Submental space infection





## Submental Abscess

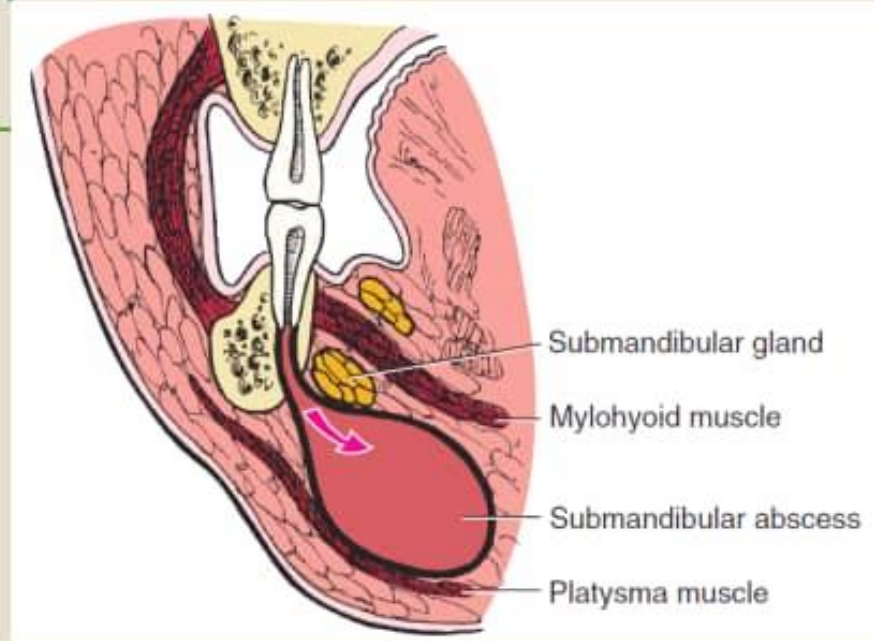




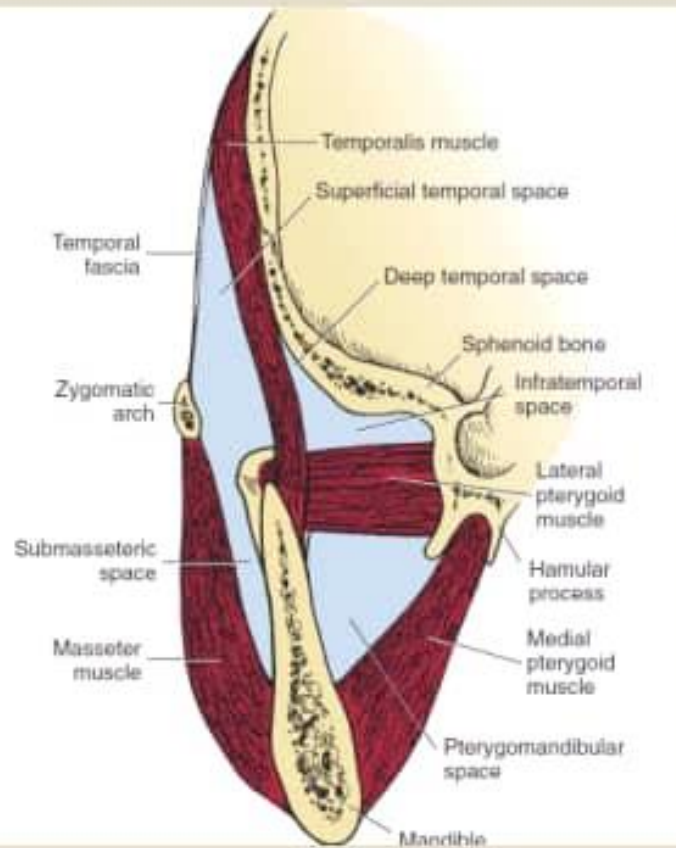
Submandibular  
Space



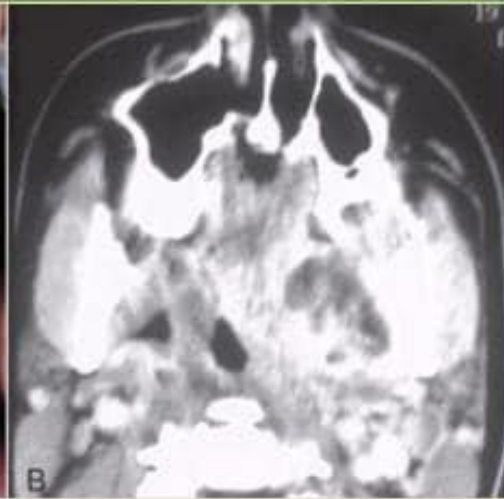
# Submandibular Space



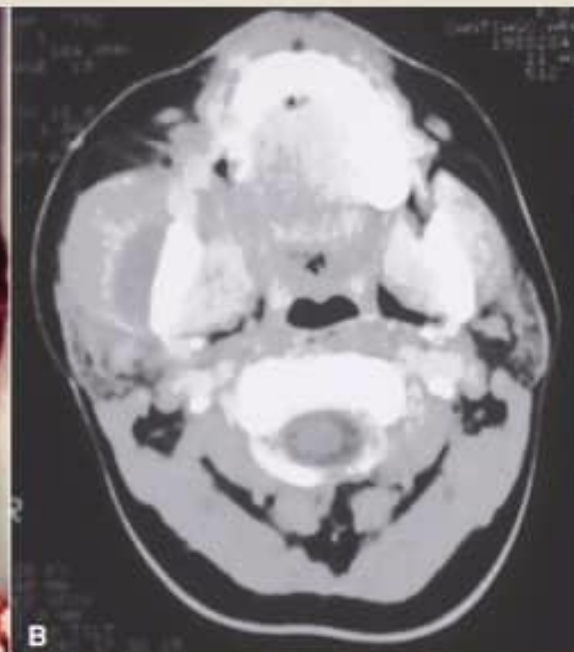
# Masticator Space



# Pterygomandibular Space



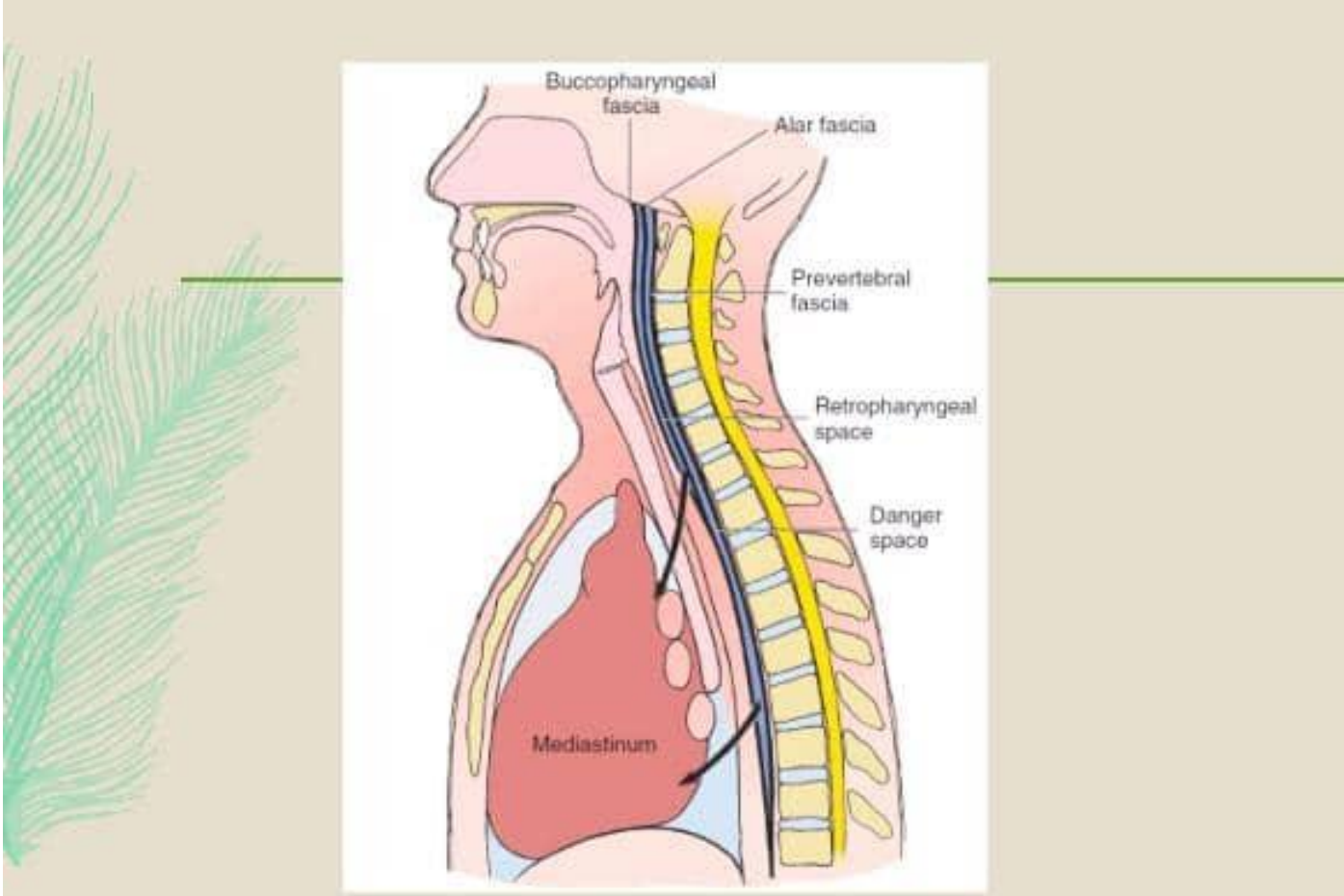
# Submasseteric Space





***Fig. 1.*** Severe bilateral temporal space swelling.

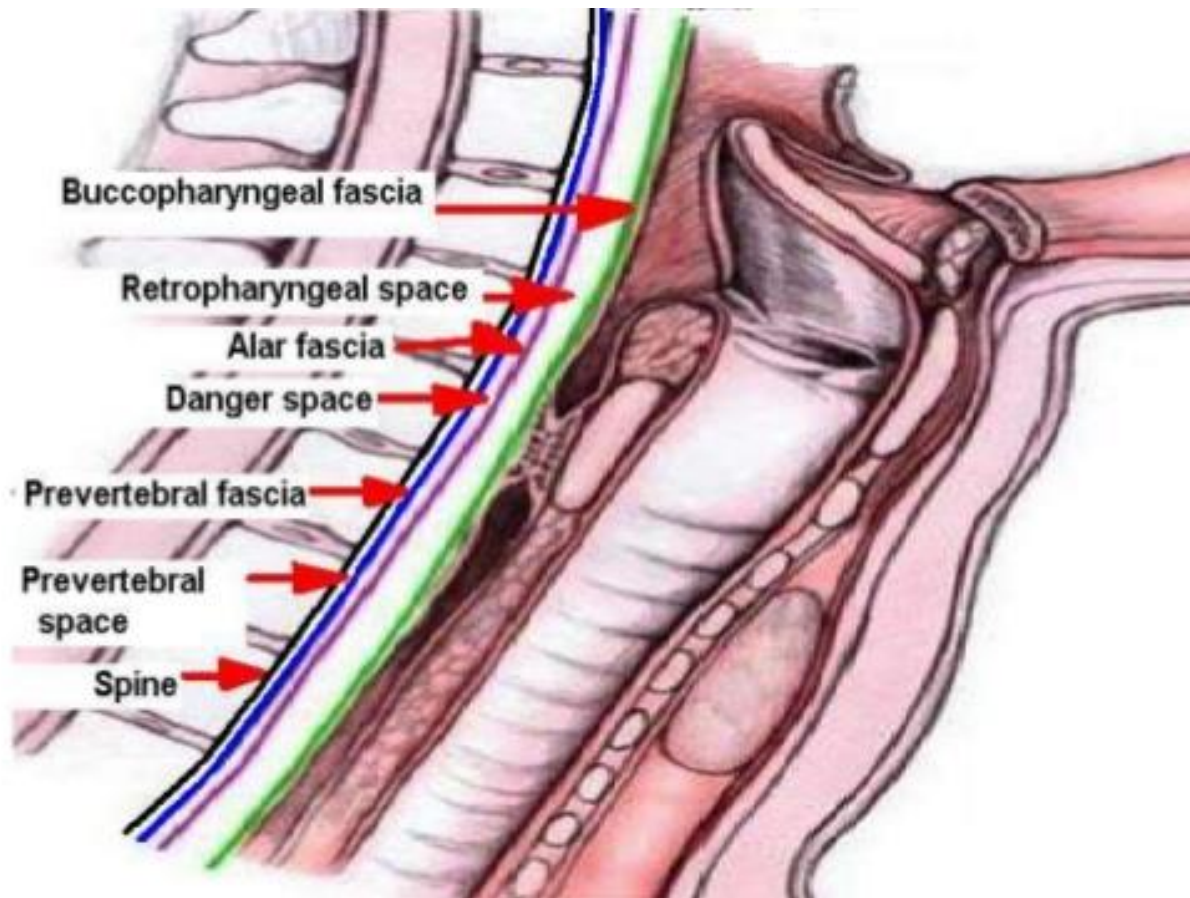




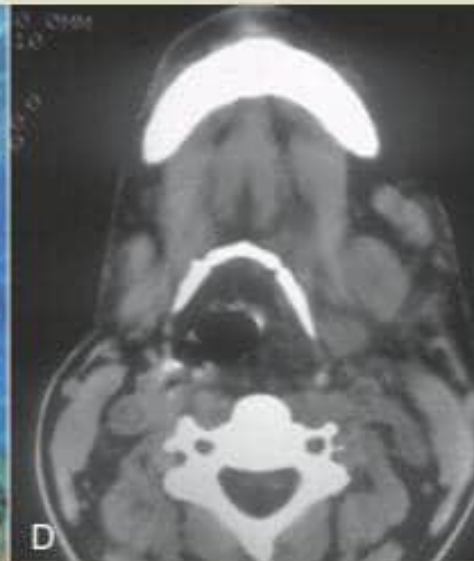


# Lateral Pharyngeal Space

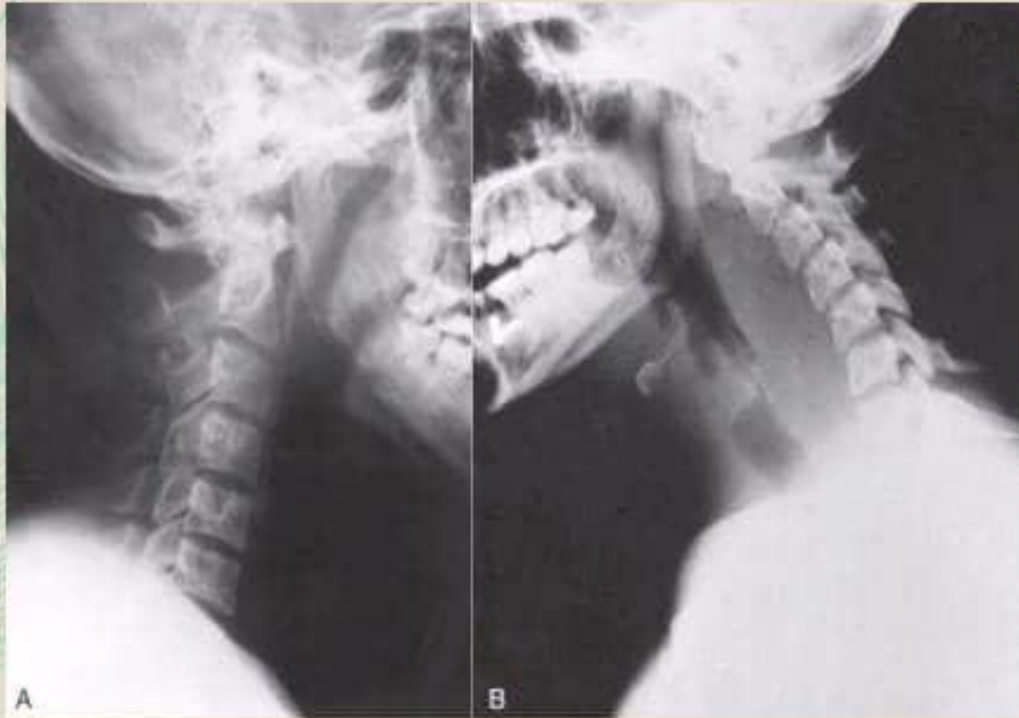




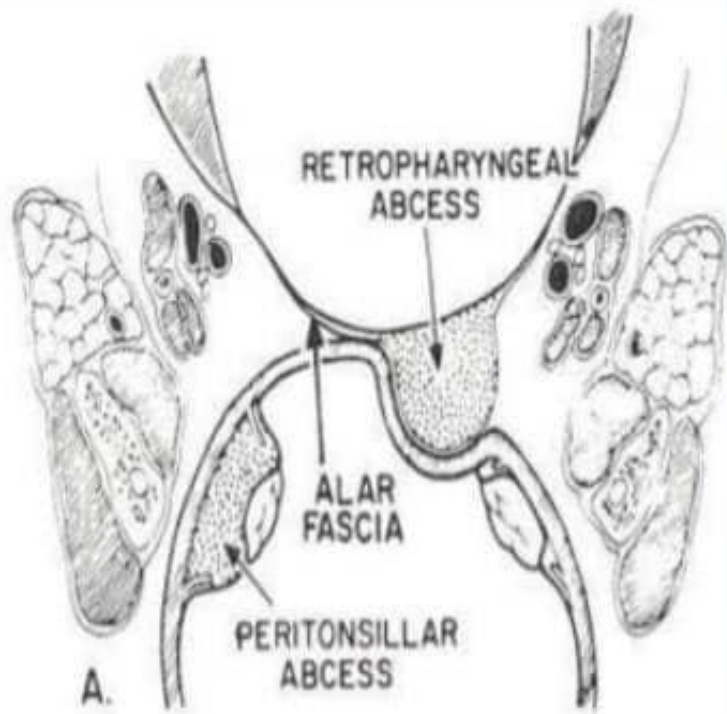
# Lateral Pharyngeal Space



# Retropharyngeal Space

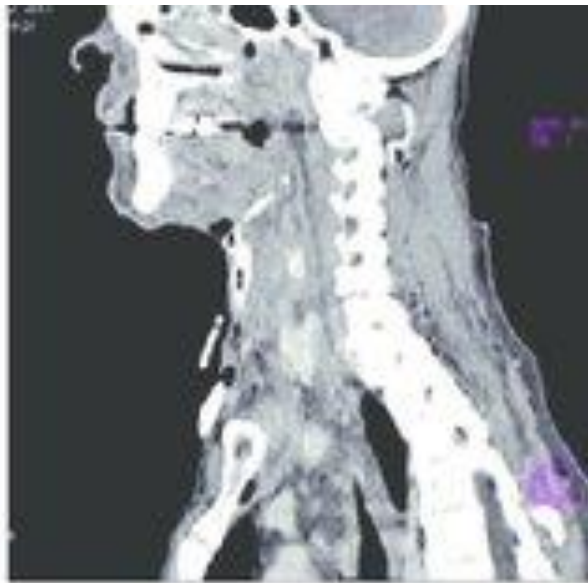
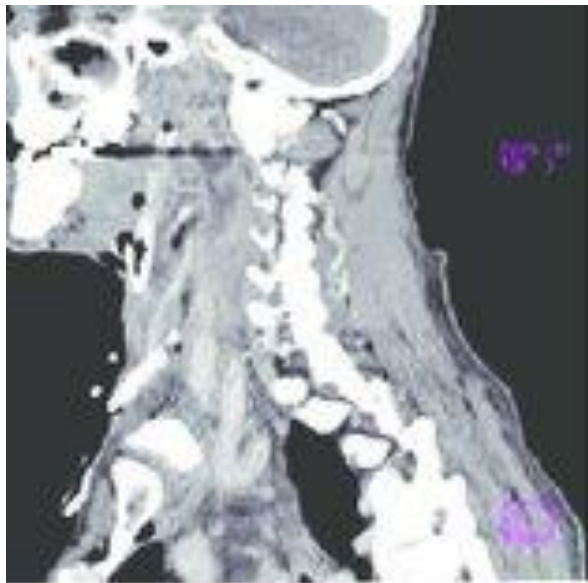


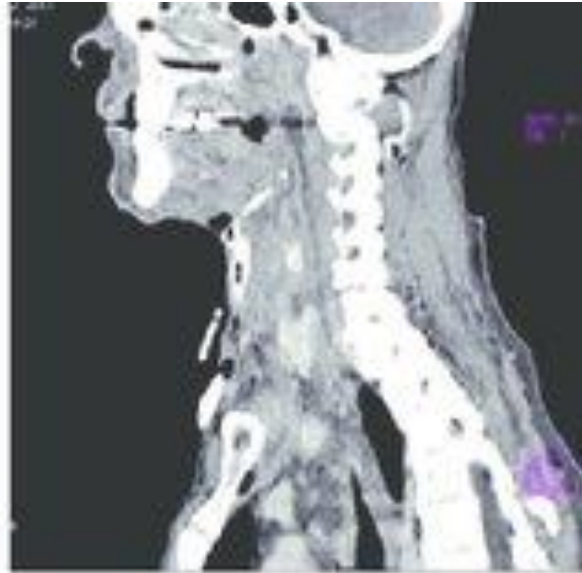
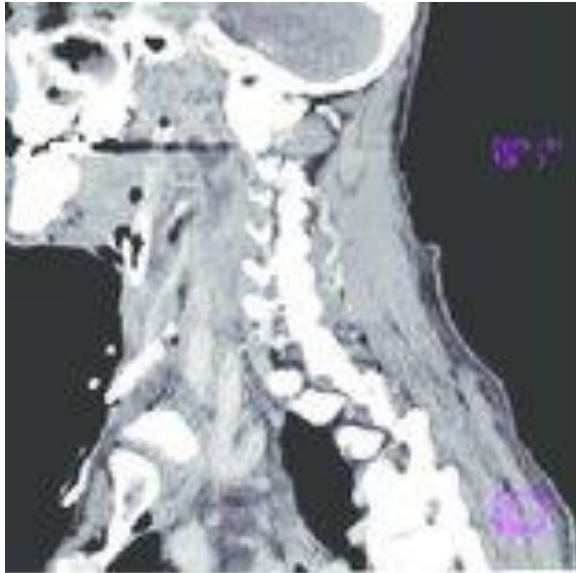
# Retropharyngeal abscess





**Prevertebral abscess i**

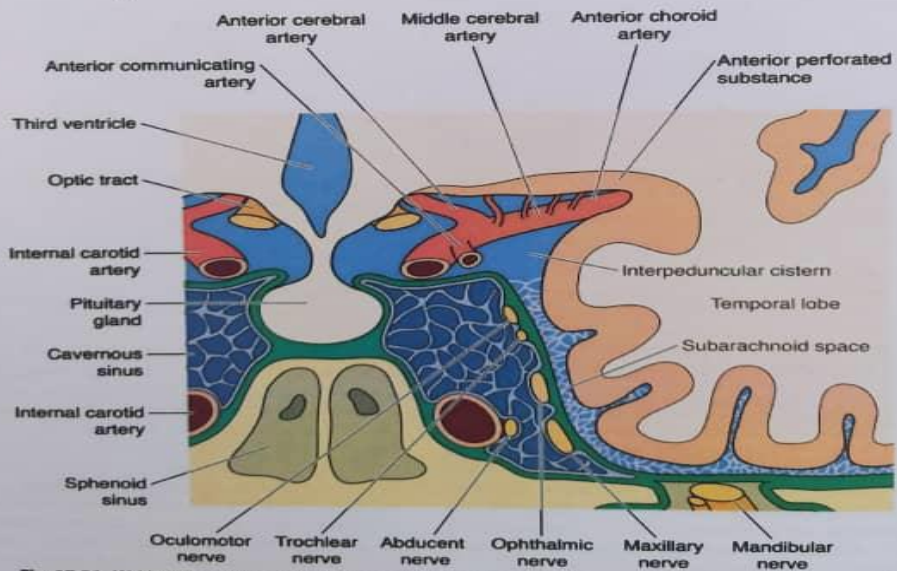
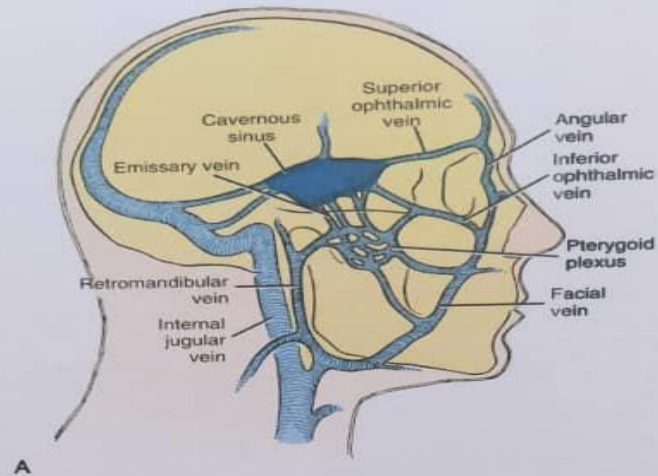








Ludwig's Angina.



**Fig. 17.21** (A) Hematogenous spread of infection from the jaw to the cavernous sinus may occur anteriorly via the inferior or superior ophthalmic vein or posteriorly via emissary veins from the pterygoid plexus. (B) Structures of the cavernous sinus. (From Gard G. An investigation into the regulation of intracranial pressure and its influence upon the surrounding cranial bones. *J Bodyw Mov Ther.* 2009;13[3]:246-254.)





## Principles of Treatment

- Determine the severity of the infection
- Complete history
- Physical examination
- State of the patients host defense
- Treat the infection surgically





# Principles of Treatment

- Support the patient medically
- Choose and Rx the appropriate AB
- Re-evaluate the patient frequently
- Referral to OMS?



# Severity of the Infection

- Complete History
  - Chief Complaint
  - Onset
  - Duration
  - Symptoms





# Physical Examination

- Vital Signs
  - Temperature-  
systemic  
involvement  $>101$  F
  - Blood Pressure-  
mild elevation
  - Pulse-  $>100$
  - Increased  
Respiratory Rate-  
normal 14-16



# Severity of the Infection

- How the patient feels- Malaise
- Previous treatment
- Self treatment
- Past Medical History



# Physical Examination

- General appearance
- Palpate the area of swelling
  - Indurated- firm, hard
  - Fluctuant- fluid filled
  - Doughy- normal
- Intra-oral exam

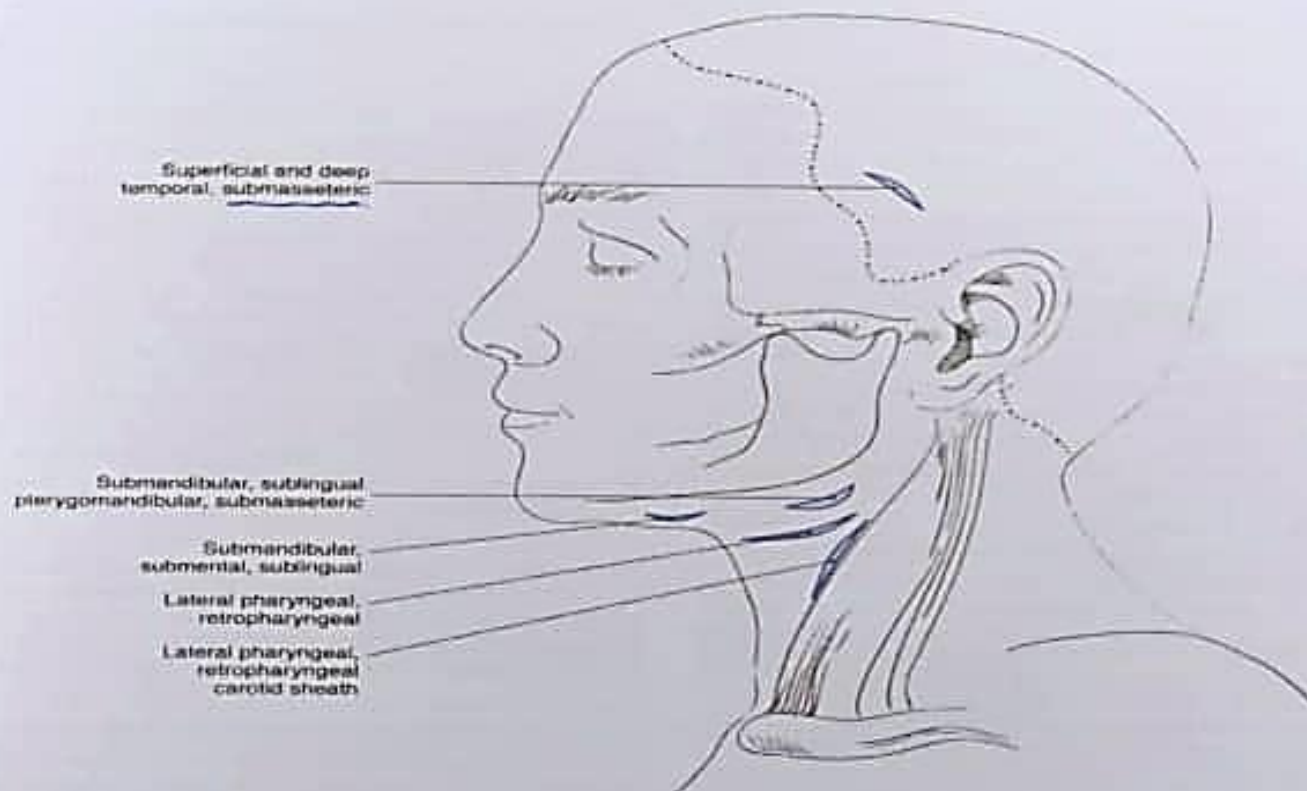


# Intraoral Exam





**FIGURE 38-10** Jackson-Pratt irrigating drain placed from an intraoral incision through the pterygomandibular space to an extraoral incision, allowing unidirectional irrigation and drainage. (Adapted from Flynn TR. Surgical management of orofacial infections. *Atlas Oral Maxillofac Surg Clin North Am* 2000;8:77-100.)

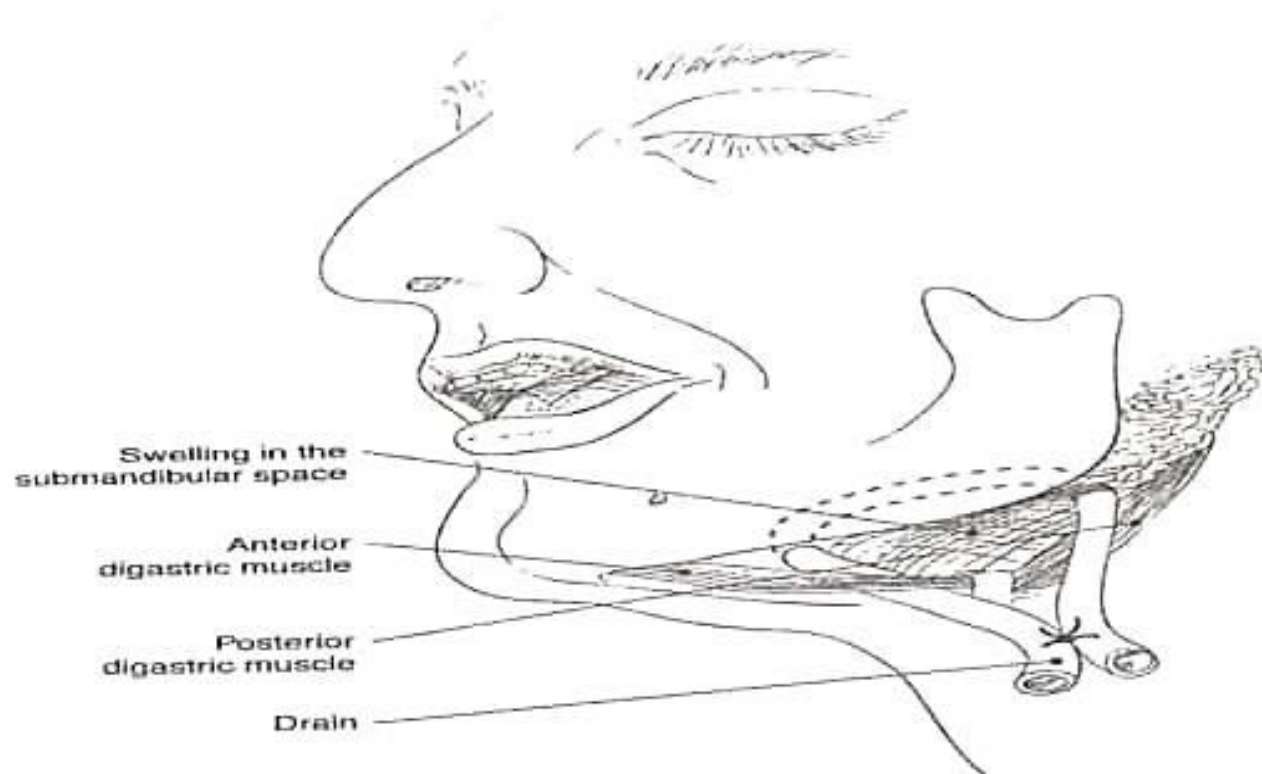


**FIGURE 30-7** Incision placement for extraoral drainage of head and neck infections. Incisions at the following points may be used to drain infections in the indicated spaces: superficial and deep temporal, submasseteric; submandibular, submental, sublingual; submandibular, sublingual, pterygomandibular, submasseteric; and lateral pharyngeal, retropharyngeal; lateral pharyngeal, retropharyngeal, carotid sheath. (Adapted from Flynn TR. Surgical management of orofacial infections. *Atlas Oral Maxillofac Surg Clin North Am* 2000;8:77–100.)

# Choosing the Appropriate Antibiotic

- Is an antibiotic necessary?
- Indications:
  - Acute onset infection
  - Diffuse swelling
  - Compromised host defenses
  - Involvement of fascial spaces
  - Severe pericoronitis





**FIGURE 38-9.** Pathway of a through-and-through drain of the submandibular space. Note that the drain passes deep to the medial surface of the mandible, below the attachment of the mylohyoid muscle. (Adapted from Flynn TR. Surgical management of orofacial infections. *Atlas Oral Maxillofac Surg Clin North Am* 2000;8:77-100.)



# Principles of Antibiotic Therapy

- Use Empiric Therapy
- Use narrowest spectrum drug
- Use antibiotic with the lowest toxicity
- Use bactericidal antibiotic
- Be aware of Cost \$\$  
\$



# Principles of Antibiotic Therapy

- Administer the antibiotic properly
- Proper route of administration
- Proper dose
- Proper time interval
- Adequate period of administration

Empiric Antibiotic Therapy

Drug	Situation	Route of Administration
Pen V	Mild-moderate infection	PO
Pen G	Moderate-severe infection	IV
Clindam	Mild infection + Pen allergy	PO
Cefazolin (Duricef)	Mild-moderate infection + Pen allergy, decreased liver	PO
Cefazolin (Duricef)	Moderate-severe infection + Pen allergy, decreased liver	IV
Clindamycin	Clinical infection suspected*	PO
Mercaptoicilic/Amoxicillin suspension (Flagyl)	Coinfection with Pen G	PO
Augmentin	Severe, indolgent origin drug and longer time	PO

Tetracycline + Mercaptoicilic      Serious infection with severe allergy to Pen (avoid tetracycline)  
 Vancomycin                              Suspected IV  
 Ciprofloxacin + Mercaptoicilic

\* Serious infection (Clindamycin not as good against staph. as Pen + Mercaptoicilic)

**TABLE 38-8. Empirical Antibiotics\* of Choice for Odontogenic Infections**

Severity of Infection	Antibiotic of Choice
Outpatient	Amoxicillin Clindamycin Azithromycin Penicillin allergy: Clindamycin Azithromycin Moxifloxacin
Inpatient	Ampicillin + sulbactam Clindamycin Ampicillin + metronidazole Penicillin allergy: Clindamycin Ceftriaxone Moxifloxacin (especially for <i>Eikenella corrodens</i> ) Vancomycin + metronidazole ± moxifloxacin

\*Empirical antibiotic therapy is used before culture and sensitivity reports are available. Cultures should be taken in severe infections that threaten vital structures.

# Patient Monitoring



# Patient Monitoring

- Re-evaluate the patient frequently
- Response to treatment
  - Temperature
  - Swelling
  - How do you feel?
- Need for additional imaging?



# Reasons for Treatment Failure

- Inadequate Surgery
- Depressed host responses
- Foreign body
- Antibiotic problems
  - Patient noncompliance
  - Drug not reaching the site
  - Drug dose too low
  - Wrong antibiotic



## Development of an adverse reaction?



# با تشکر از حسن توجه شما

