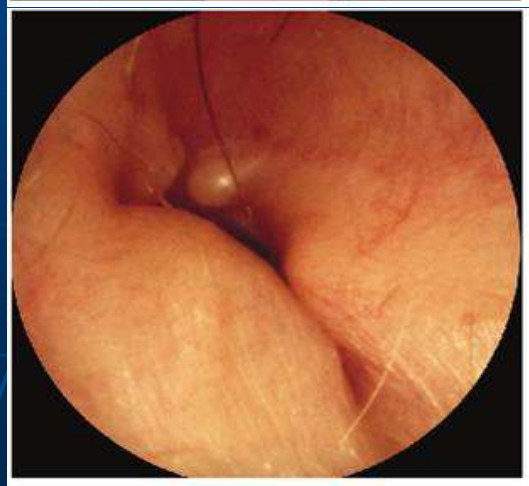
Tumors of the External Ear

Benign Tumors:

***Exostosis*:**

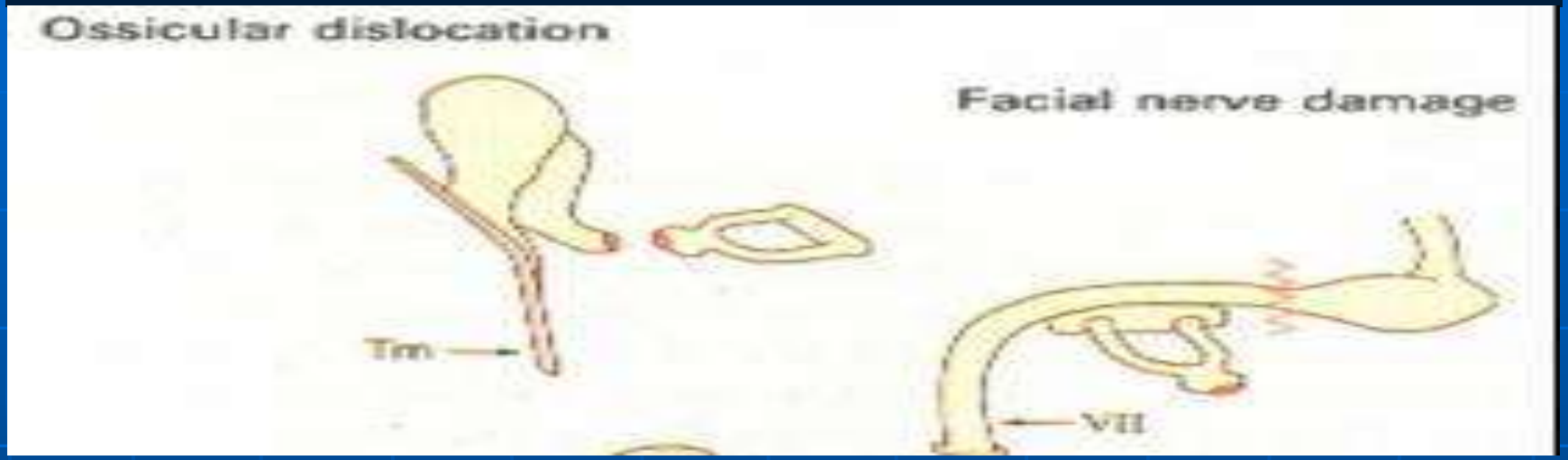
- Sessile or pedunculated bony tumor into the bony meatus. If large it may cause deafness or interfere with drainage of discharge in C.S.O.M.
- Treatment : Removal if causing obstruction.



Tumors of the External Ear (cont.)

- **Malignant Tumors:**
- Rodent ulcer or carcinoma
- Treatment: Excision and/or irradiation

Trauma to the Middle Ear



1- Otitic Barotrauma.

2- Ossicular disconnection.

3- Fracture of temporal bone.

4- F. B. in middle ear

Fractures of Temporal Bone

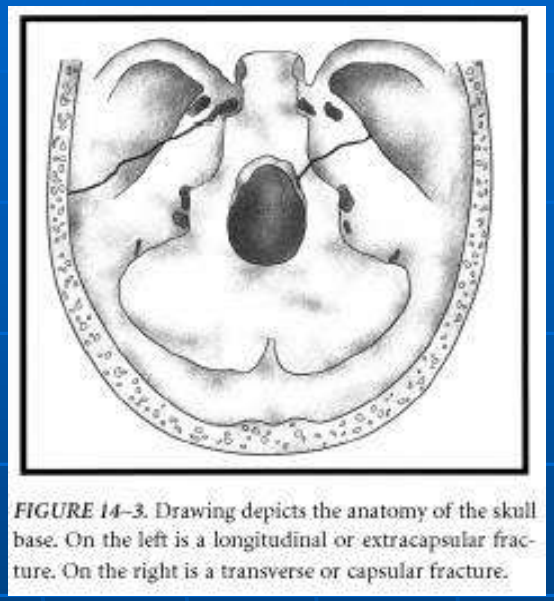


FIGURE 14–3. Drawing depicts the anatomy of the skull base. On the left is a longitudinal or extracapsular fracture. On the right is a transverse or capsular fracture.

It is type of Fracture base of skull (middle cranial fossa)

Types: 1 - Longitudinal Fracture

2 - Transverse Fracture

1)Longitudinal Fracture of Temporal Bone

- It is the common type (80%).
- Fracture line is in long axis of temporal bone
- It involves the tympanic cavity , tympanic membrane and bony external canal.

Clinical Picture:

- Conductive deafness.
- Bleeding through ruptured D.M. and may be CSF otorrhoea.
- Facial N. paralysis is uncommon and partial.

2- Transverse Fracture of Temporal Bone

- It is the less common type (20%).
- Fracture line is at right angle to the long axis of temporal bone.
- It involves the labyrinth and or internal auditory meatus.

Clinical Picture:

- Perceptive deafness (S.N.H.L.).
- Vertigo & Nystagmus.
- Haemotympanum which may contain also CSF.
- Facial N. paralysis is more common and more severe.

Fracture of Temporal Bone

(cont.)

Investigations:

1- C.T. scan to assess the fracture line.

2- Audiological tests to assess :

-Type and degree of deafness.

- Stapedial reflex .

3-Tests for Facial nerve function.

Fracture of Temporal Bone
Treatment

1- Neurosurgical treatment of the patient (for any associated coma or extradural haemorlrage,….)

2- If CSF Otorrhoea

- Prophylactic antibiotics (that cross the blood brain barrier).
- Semi sitting position and avoid straining.
- Sterile ear dressing.
- Neurosurgical repair by fascia late for some cases.

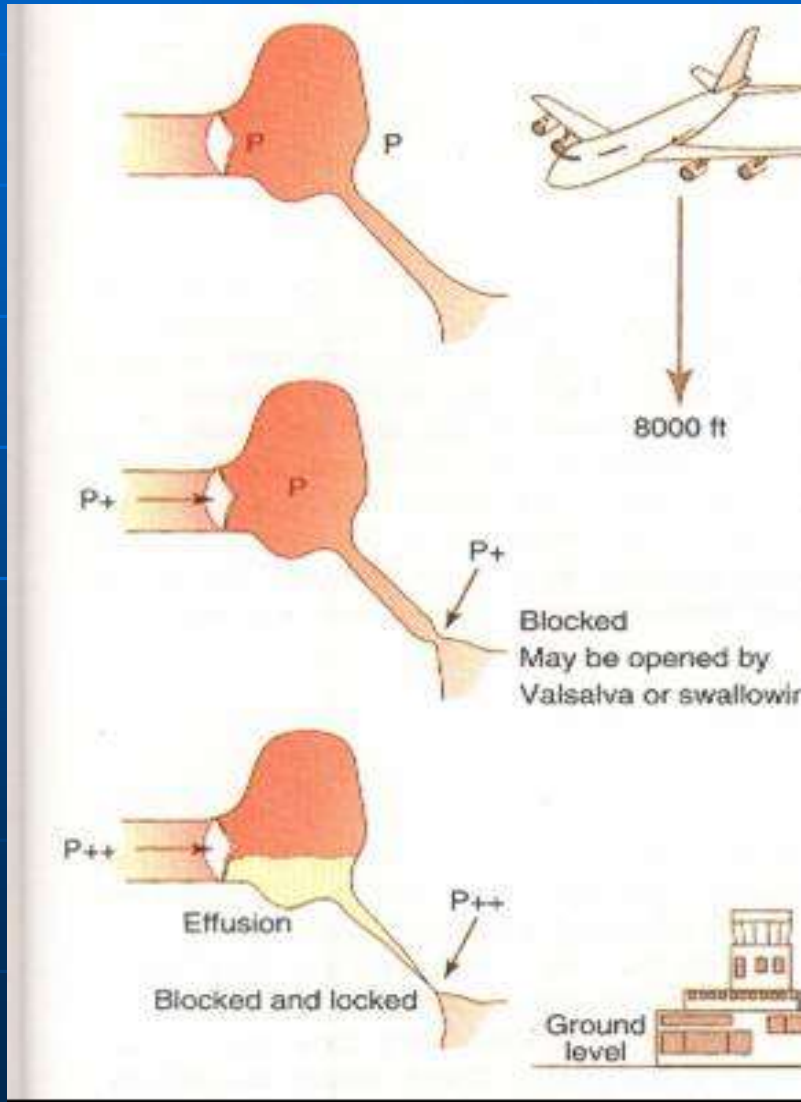
3- Facial Nerve paralysis if incomplete and delayed usually recovers spontaneously but if severe and immediate (indicating severe nerve injury) do surgical exploration and nerve suture or graft.

4-Treatment of Traumatic Rupture of D.M. & Ossicles.

Otitic Barotrauma

It occurs during descent by aircraft or during diving.

Cause : air pressure in high altitude is low and when the aircraft descent rapidly the pressure increase and become more than that in the middle ear so air must go through Eustachian tube to middle ear.

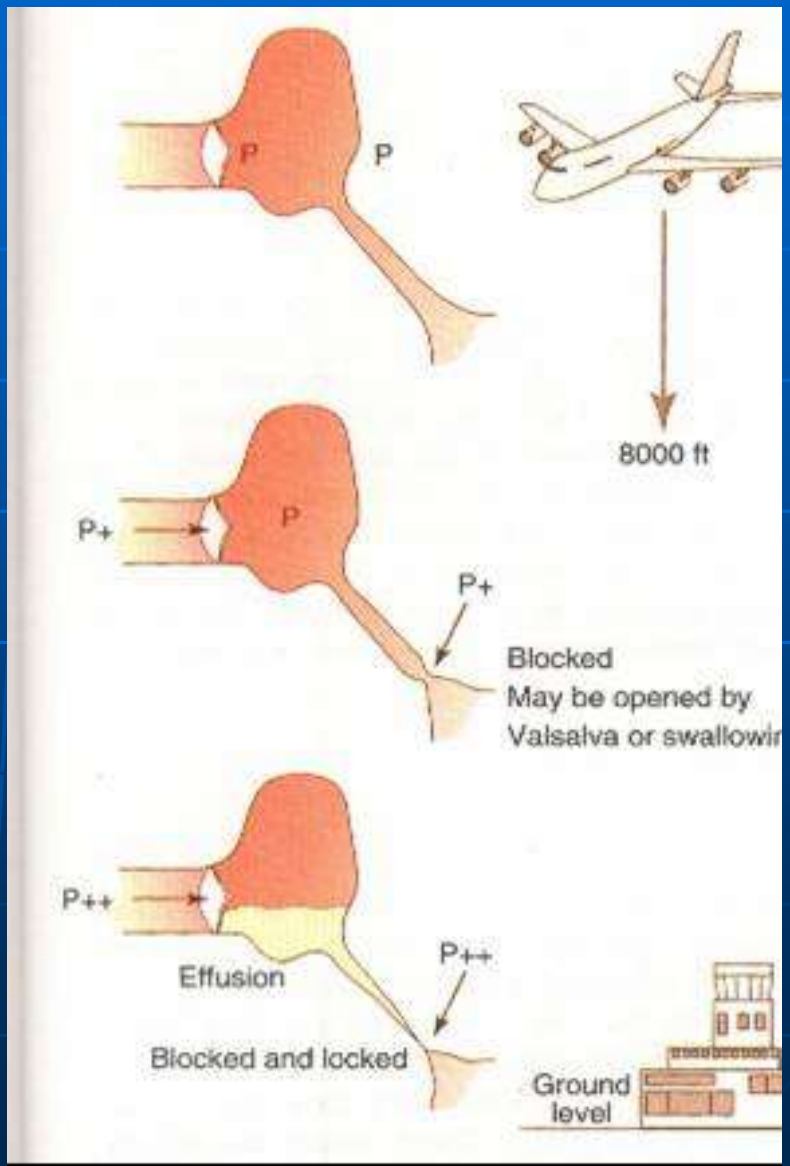


Otitic Barotrauma (cont.)

If Eustachian tube does not open (due to edema in its wall as in rhinitis or allergy or during sleep or no swallowing). There will be negative pressure in the middle ear.

Otitic Barotrauma (cont.)

- The negative pressure in the middle ear will lead to:
- 1- Retraction of the drum membrane that may lead to rupture.
- 2- Congestion and edema of m.m. of middle ear followed by transudation of Fluid.



Otitic Barotrauma (cont.)

Clinical Picture:

1. Pain and deafness & tinnitus
2. Drum is retracted or even perforated.
3. Drum may be intact and show fluid level behind it (hair lines).

Treatment of Barotrauma

Prophylactic treatment.

1) Avoidance of flying with URTI

2) During descent chewing gum, always swallow, do Valsalva, do not sleep “ET are not opened by swallowing during sleep”.

Treatment of Barotrauma (cont.)

Curative Treatment:

1- Nasal drops & Systemic nasal decongestant

2- Antibiotics.

3- Inflation of Eustachian tube " there is 3 methods"

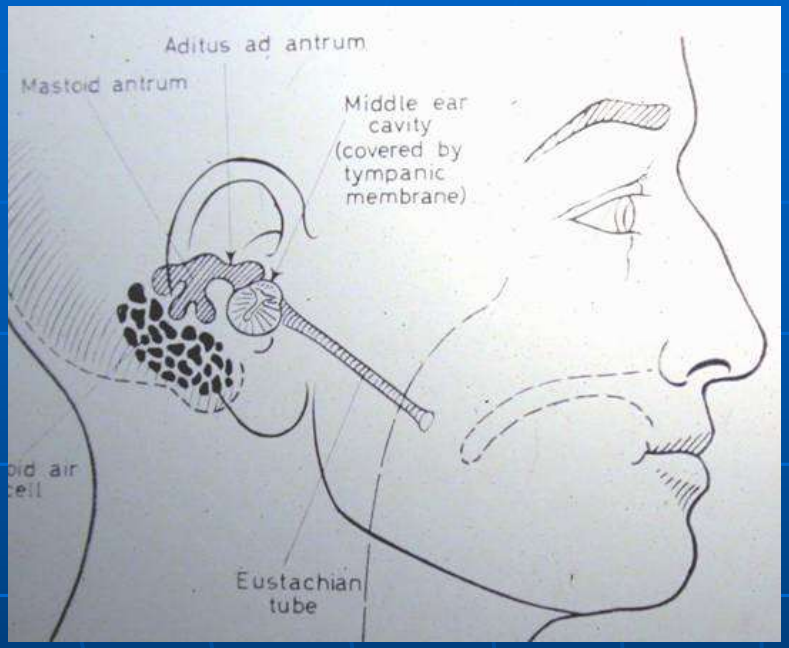
a) Valsalva method.

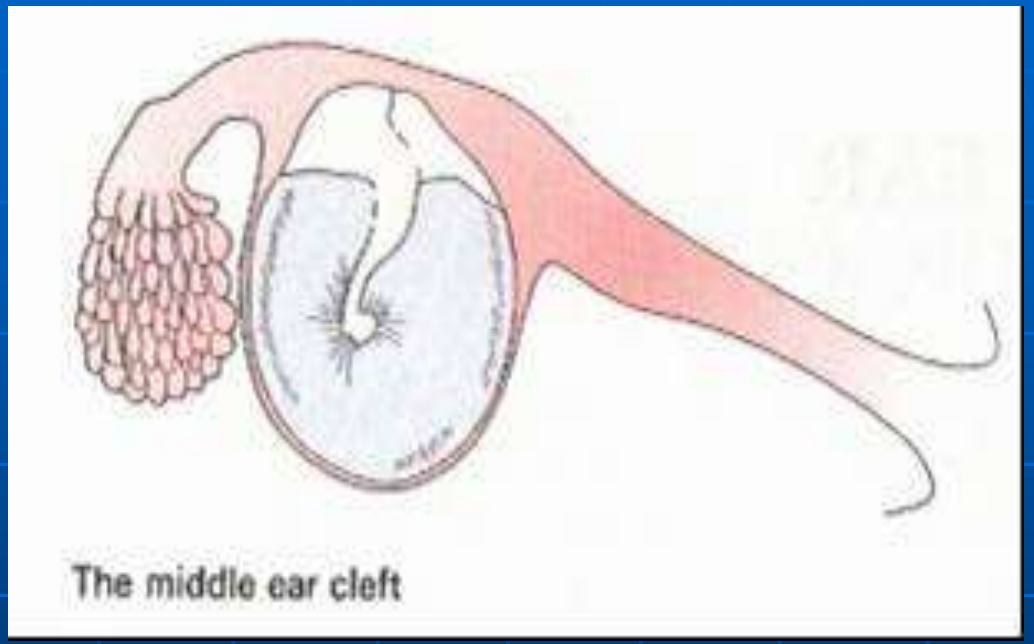
b) Politzer's method.

c) Catheter method (Eustachian Catheterization).

4- If Fluid is present do myringotomy.

Acute Suppurative Otitis Media





- It is acute inflammation of the m.m. lining the middle ear cleft.

Etiology of A. S. O. M.

(I) Infection through the Eustachian tube.

1) Upper respiratory tract infection.

a) Acute Rhinitis of common cold.

b) Acute Tonsillitis & adenoiditis.

c) Acute Sinusitis.

d) Fevers with nasal manifestations as measles, scarlet fever, chickenpox & whooping cough.

Etiology of A. S. O. M. (cont.)

(I) Infection through the Eustachian tube

1) Upper respiratory tract infection.

2)Post nasal pack for more than 24 H. without giving antibiotics.

3) Swimming & Diving in infected swimming pools.

4) Vomitus and milk regurge during feeding of infants (E.T. being Wider, shorter & more horizontal).

Etiology of A. S. O. M. (cont.)

(II) Infection through the external auditory meatus.

In cases of traumatic perforation of the drum membrane or dry perforation 2ry to O M.

(III) Blood borne infection.

(very rare) as in exanthemata as measles and whooping cough.

Etiology of A. S. O. M. (cont.)

Bacteriology: it is caused by the following organisms in order of frequency.

1- Streptococcus pneumonia.

2- Homophiles influenza.

3- Branihamella catarrhalis.

4- Streptococcus pyogenes.

Virus infection may proceed bacterial infection in some cases. (20%)

Pathological Stages Of ASOM

1)Stage of Eustachian T. Salpingitis.
(Catarrhal inflammation &obstruction of E.T.)
2)Stage of Hyperemia (acute catarrhal OM).
3)Stage of Suppuration.
4)Stage of perforation.
5)Stage of Complications (may occur before or after perforation).
6)Stage of Resolution (may occur with treatment after any stage).

Clinical Picture of A.S.O.M
Symptoms

(A) In infants

1) High Fever (may reach 40-41°0)
2) Because of the pain the infant is irritable, sleepless, and catch his ear with his hand.
3) Gastrointestinal disturbances as vomiting and diarrhea as E.T. is short and wide and pus can drain into pharynx and can be swallowed.

Symptoms of A.S.O.M. cont

(B) In children

1) Fever is less (38 – 38.5°C).
2) Earache is the main complaint and may be severe.
3) Ear discharge after perforation of D.M.

(C) In Adults

1) Fever usually absent or minimal.
2) Earache.
3) Deafness , tinnitus & autophony.
4) Ear discharge which is mucopurulent and may be bloody in the beginning.

Signs of A. S. O. M.



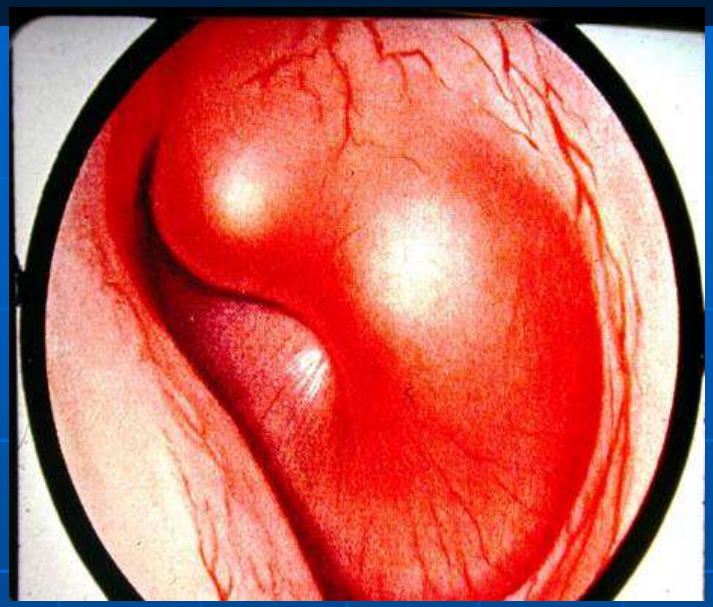
(A) In children and adults

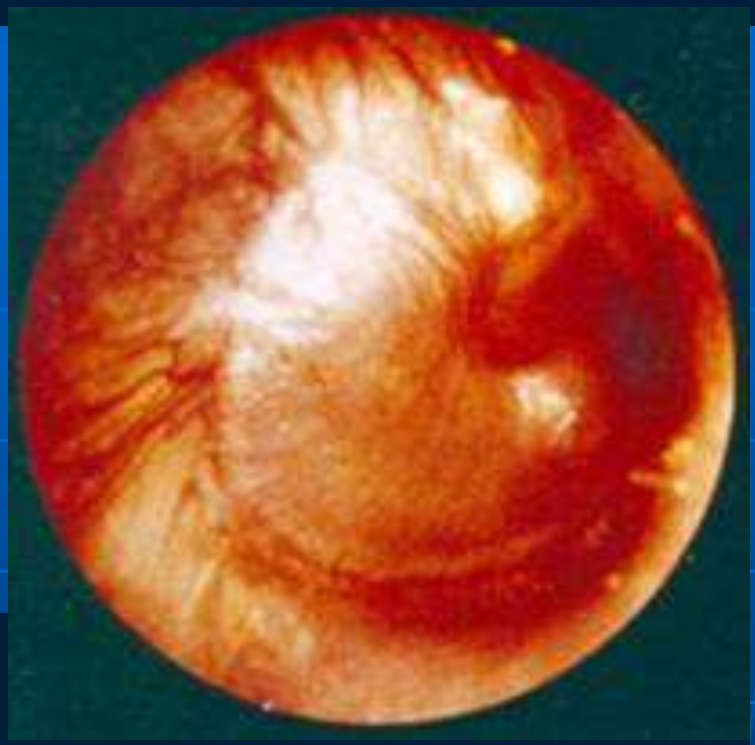
1- Drum membrane first show retraction then return to normal position and show congestion along handle of malleus and periphery , then becomes generalized.

2- Bulging of D. M. proceed to perforation and otorrhoea.

3- C.D. by T.F. tests.

Signs of A. S. O. M. (cont.)





(B) In infant

The drum membrane thicker than adults thus there is no redness or bulging there may be only loss of cone of light **or** slight congestion.

Acute Suppurative Otitis Media (cont.)

With rupture of the drum membrane, all acute symptoms disappear as fever and pain and remains only the deafness and tinnitus.

N.B. The persistence of pain or fever after rupture of the drum M. means:

1- The opening is not sufficient for drainage. **or**

2- There is a complication.

Acute Suppurative Otitis Media (cont.) Investigations

Most cases needs No investigations.

1)Culture & sensitivity test from aural discharge or during Myringotomy.

2)Pure tone Audiometry &Tympanometry

3)X-ray Mastoid view show hazy air cells with intact inter cellular septa.

In acute Coalescent Mastoiditis the SEPTA are lost.

Treatment Of A.S.O.M.

(A) General.

(1) Rest in bed, light nutrient diet, plenty of fluids.

(2) Antibiotics: Broad spectrum antibiotics for 10 days as "amoxicillin + clavulinic acid or 2ed generation cephalosporins ".

(3) Analgesics for the pain.

(4) Systemic and local nasal decongestants as pseudoephedrine tabl.& vasoconstrictor nasal drops.

Treatment Of A.S.O.M.

(B) Local to the ear

(1) In stage of bulging of the drum do Myringotomy and culture and sensitivity from the discharge.

(2) In stage of perforation

A) If perforation is small or high do Myringotomy to allow proper drainage.

B) Repeated local cleaning of the discharge by suction or dry moping and antibiotic ear drops.

Prognoses Of A.S.O.M.

It depends upon

1) Virulence of the organism.
2) General resistance of the patient.
3) Adequacy of treatment.

(A) In most of cases the patient will be completely cured.

Discharge will stop & ***Hearing*** will return to normal.

(B) - In some cases *discharge will continue*

In spite of the previous lines of treatment including myringotomy, then we must think of any thing causing obstruction of the Eustachian tube **as** enlarged tonsils and adenoids and we must operate upon them if diseased.

If in spite of all this (proper antibiotics, proper drainage through the drum & patent Eustachian tube) discharge continue , do Cortical Mastoidectomy operation to help drainage of the middle ear (Masked Mastoiditis).

(C) In some cases *Hearing will not return to normal* after healing of the drum membrane due to formation **of** either:

1- Chronic *secretory* O.M. or

2- Chronic *adhesive* O.M. And the condition, now, must be treated accordingly.