



TODAY'S TOPICS-

NASAL BONE FRACTURE,

EPISTAXIS & F.B. NOSE.

Presented by-

Prof. Dr. G H M Shahidul Haque

Profesor & Head (ENT)

Shahabuddin Medical College, Dhaka.

TRAUMA TO THE FACE

- Injuries of face may involve soft tissues, bones or both.
- The majority of facial injuries are caused by automobile accidents.
- Others result from sports, personal accidents, assault and fights.
- The management of facial trauma can be divided into:
 - a) General management
 - b) Soft tissue injuries and their management.
 - c) Bone injuries and their management.

FACIAL TRAUMA

Bone injuries and their management:

The face can be **divided into three regions**:

- a) **Upper third**- above the level of supraorbital ridge.
- b) **Middle third**- between the supraorbital ridge and the upper teeth.
- c) **Lower third**- mandible and the lower teeth.

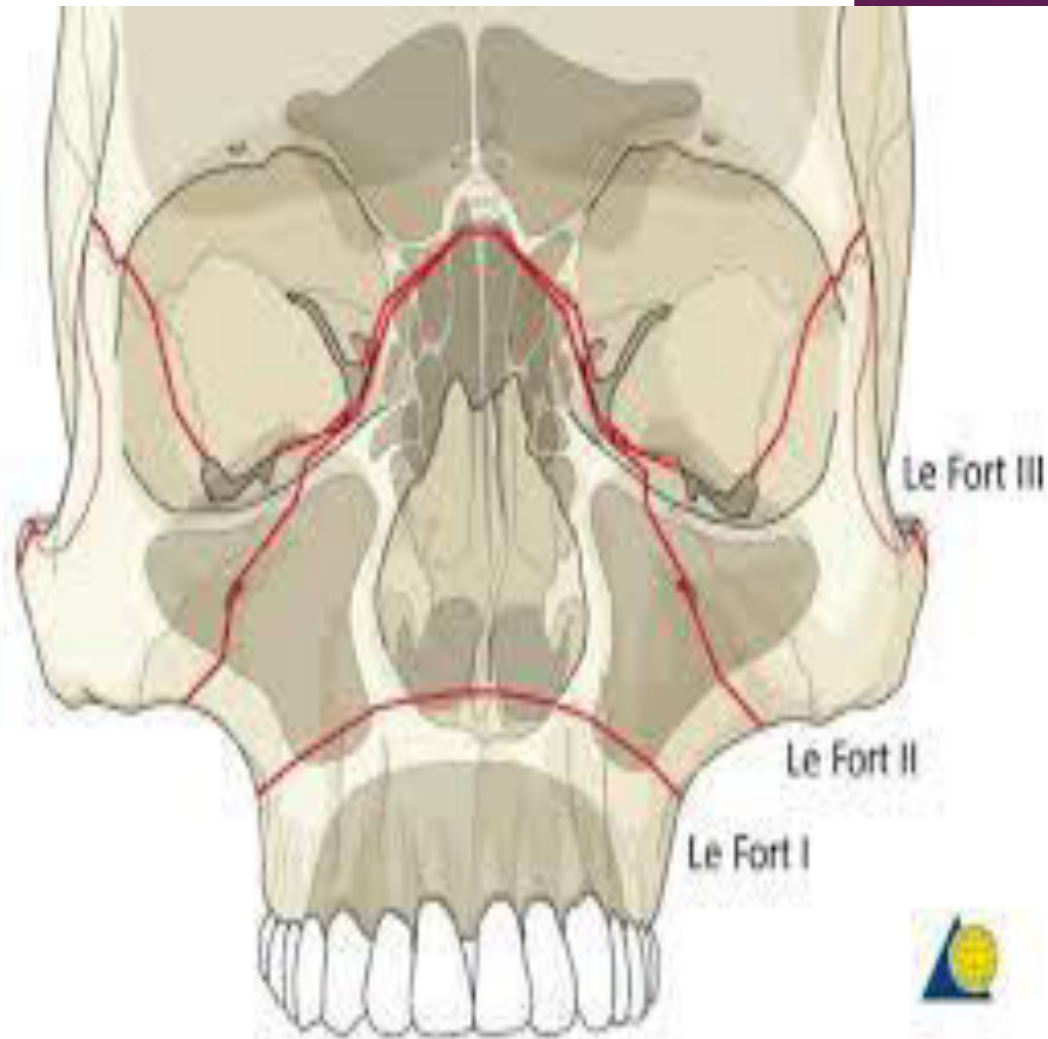
FRACTURE OF MIDDLE THIRD OF FACE.

Includes :

- Nasal bones and septum.
- Naso-orbital area.
- Zygoma .
- Zygomatic arch.
- Orbital floor.
- Maxilla- **Le Fort I** (transverse)
 - **Le Fort II** (pyramidal)
 - **Le Fort III** (craniofacial dysjunction)

TYPES OF FRACTURE MAXILLA

- **Le Fort I (transverse)**- fracture runs above and parallel to the palate.
- **Le Fort II (pyramidal)**- fracture passes through the root of nose, lacrimal bone, floor of the orbit, upper part of maxillary sinus and pterygoid plates.
- **Le Fort III (craniofacial dysjunction)**- is complete separation of facial bones from the cranial bones.



Le Fort Classification of Facial Bones Fractures



Le Fort I

Le Fort II

Le Fort III

FRUCTURE OF NASAL BONE AND SEPTUM

- ✓ Fracture of nasal bones are the most common because of the projection of nose on the face.
- ✓ Traumatic forces may act from the front or side.
- ✓ Magnitude of force will determine the depth of injury.

TYPES OF NASAL FRACTURES.

a) **Depressed fracture:** due to frontal blow.

b) **Angulated fracture:**

a lateral blow may cause unilateral depression of nasal bone on the same side or may fracture both the nasal bones and the septum with deviation of nasal bridge.

- Nasal fractures are often accompanied by injuries of nasal septum.
- Septal haematoma may form.

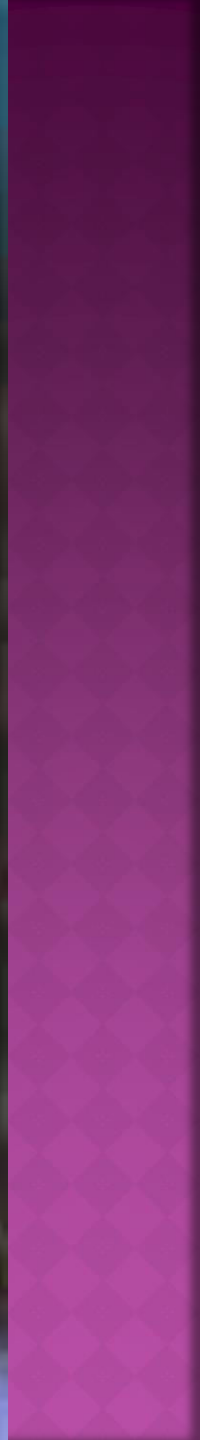
Fracture Nasal Bone



Before



After



NASAL FRACTURE (CONT.)

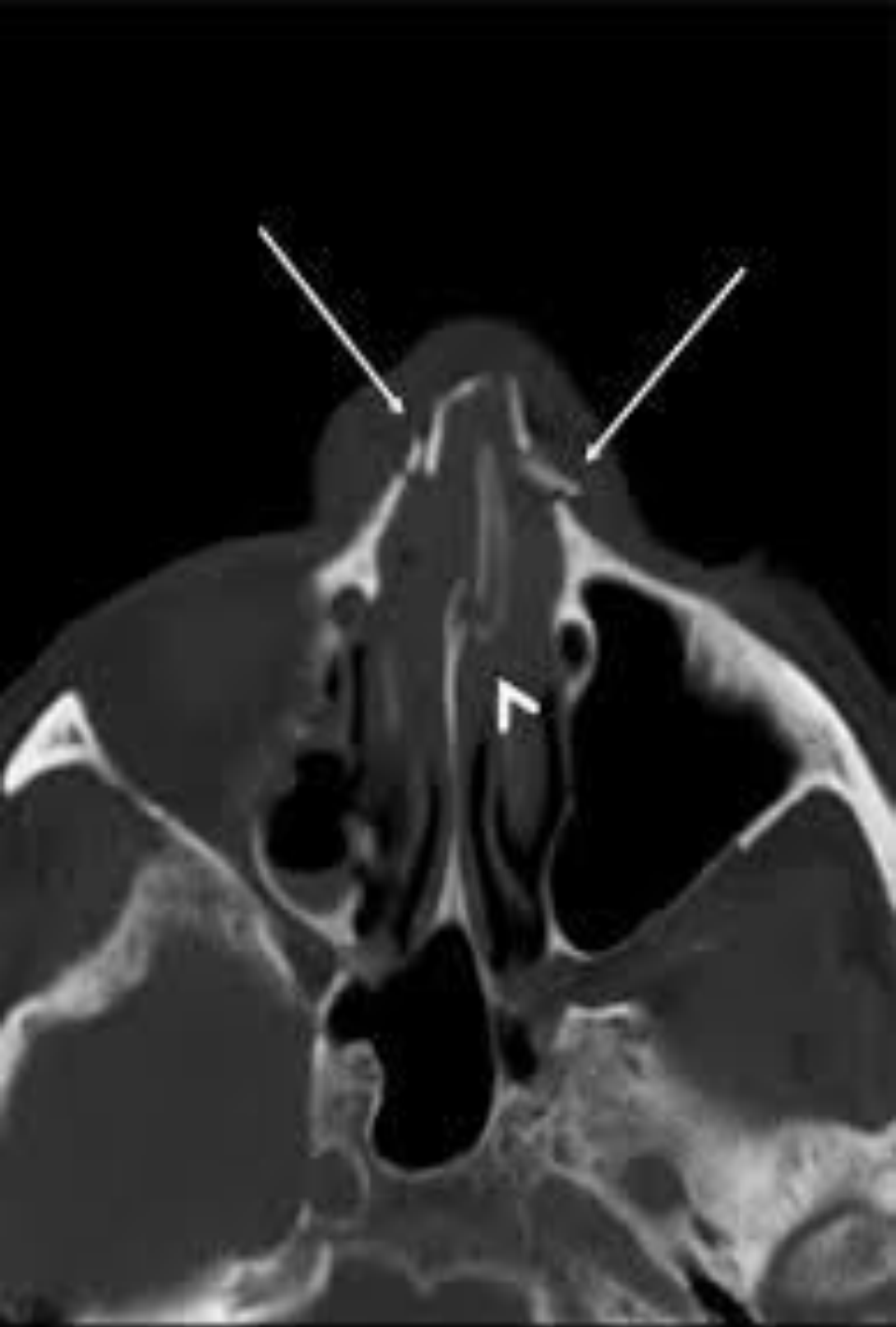
Clinical features:

- ✓ Swelling of nose.
- ✓ Periorbital ecchymosis.
- ✓ Tenderness.
- ✓ Nasal deformity.
- ✓ Crepitus and mobility of fractured fragments.
- ✓ Epistaxis .
- ✓ Nasal obstruction.
- ✓ Lacerations of the nasal skin with exposure of nasal bones and cartilage.

DIAGNOSIS

Diagnosis is best made on physical examination.

- X- rays may or may not show fracture.
- X-rays includes water's view, right and left lateral views and occlusal view.



TREATMENT

- ◉ Simple fractures without displacement -need no treatment.
- Others may require closed or open reduction.

Closed reduction-

- best time is before the appearance of oedema or after it has subsided usually in 5-7 days.
- depressed fracture of nasal bones can be reduced by a straight blunt elevator guided by digital manipulation from outside.
- Laterally, displaced nasal bridge can be reduced by firm digital pressure in the opposite direction.

TREATMENT (CONT.)

- ❖ Impacted fragments require disimpaction with Walsham or Asche's forceps.
- ❖ Septal fractures reduced by Asche's forceps.
- ❖ Simple fractures may not require nasal packing.
- ❖ Unstable fractures require intranasal packing and external splintage.



TREATMENT (CONT.)

Open reduction:

- Early open reduction in nasal fractures is rarely required.
- Is indicated when closed methods fail.
- Certain septal injuries can be better reduced by open methods.
- Healed nasal deformities resulting from nasal trauma can be corrected by rhinoplasty or septorhinoplasty.

EPISTAXIS



EPISTAXIS

- Bleeding from inside the nose is called epistaxis.
- Is fairly common and is seen in all age groups- children, adult and older people.
- It often presents as an emergency.
- Epistaxis is a sign and not a disease.
- An attempt should always be made to find any local or systemic cause.

BLOOD SUPPLY OF NOSE

Nose is richly supplied by both the external and internal carotid systems, both on the septum and the lateral walls.

Nasal septum:

Internal carotid system- Anterior & posterior ethmoidal arteries (br. of ophthalmic artery).

External carotid systery artery-

Sphenopalatine artery (br. Of maxillary artery).

Septal br. Of greater palatine artery (br. Of maxillary artery)

Septal br. Of superior labial artery (br. Of facial artery)

BLOOD SUPPLY

Lateral wall:

Internal carotid system-

- ✓ Ant. & post. Ethmoidal artery.

External carotid system-

- ✓ Posterior lateral nasal A (from sphenopalatine A)
- ✓ Greater palatine A (from maxillary artery)
- ✓ Nasal br. Of anterior superior dental A (from infraorbital br.of maxillary artery)
- ✓ Branches of facial artery to nasal vestibule.

LITTLE'S AREA

- Is situated in the anterior inferior part of nasal septum, just above the vestibule.
- Four arteries- anterior ethmoidal, septal branch of superior labial, septal branch of sphenopalatine and the greater palatine, anastomose here to form a vascular plexus called “Kiesselbach’s plexus”.
- This area is the usual site for epistaxis in children and young adults.
- Retrocolumellar vein runs vertically downwards just behind the columella, is a common site of venous bleeding in young people.

CAUSES OF EPISTAXIS

Divided into:

- A. Local causes in the nose or nasopharynx.
- B. General causes
- C. Idiopathic cause

CAUSES OF EPISTAXIS

A) Local causes:

Nose -

- **Trauma** - nose picking, injuries of nose , nasal surgery, fractures of middle third of face, hard blowing of nose, violent sneeze.
- **Infections-**
 - a) acute viral rhinitis, acute sinusitis, nasal diphtheria.
 - b) Chronic rhinitis, sinusitis, atrophic rhinitis, tuberculosis, syphilis, granulomatous lesion of the nose etc.

CAUSES OF EPISTAXIS

➤ Foreign bodies-

Non-living: any neglected foreign body, rhinolith.

Living: maggots, leeches.

➤ Neoplasm of nose and paranasal sinuses.

Benign- papiloma, haemangioma.

Malignant -carcinoma or sarcoma.

➤ Atmospheric changes- high altitudes, sudden decompression(caisson's disease).

➤ Deviated nasal septum.

CAUSES OF EPISTAXIS

Nasopharyngeal causes:

- Adenoids.
- Juvenile angiofibroma.
- Malignant tumours.

CAUSES OF EPISTAXIS

B) General causes:

- **Cardiovascular system-** hypertension, arteriosclerosis, mitral stenosis, pregnancy and hormonal.
- **Disorders of blood and blood vessels-** leukaemia, thrombocytopenia, aplastic anaemia, haemophilia, hereditary telangectasia, scurvy, vitamin K deficiency.
- **Liver disease-** cirrhosis of liver (factor II, VII, IX & X deficiency)

CAUSES OF EPISTAXIS

- **Kidney disease**- chronic nephritis.
- **Drugs**- anticoagulant therapy, excessive use of salicylates and other analgesics.
- **Raised venous pressure**- tumours of mediastinum.
- **Acute general infections**- influenza, measles, whooping cough, infectious mononucleosis, typhoid, malaria, dengue fever.
- **Vicarious menstruation**- epistaxis at the time of menstruation.

CAUSES OF EPISTAXIS

c) Idiopathic cause:

Many times the cause of epistaxis is not clear.

Sites of epistaxis:

- ❖ **Little's area**- most common site, 90% cases.
- ❖ **Above the level of middle turbinate**- from internal carotid system.
- ❖ **Below the level of middle turbinate**- bleeding from the branches of sphenopalatine artery.
- ❖ **Posterior part of nasal cavity**- blood flows directly into the pharynx.
- ❖ **Diffuse** -both from septum and lateral nasal wall. Often seen in general systemic disorders and blood dyscrasias.

MANAGEMENT OF EPISTAXIS

Before management, it is important to know:

- a) Mode of onset.
- b) Duration and frequency of bleeding.
- c) Amount of blood loss.
- d) Site of bleeding.
- e) Whether bleeding is anterior or posterior.
- f) Any known bleeding tendency in the patient or family.
- g) History of known medical ailment (hypertension, leukaemias, mitral valve disease, cirrhosis, nephritis)
- h) History of drug intake (analgesics, anticoagulants etc.)

MANAGEMENT(CONT.)

First Aid:

- Most of the bleeding occurs from the Little's area and can be easily controlled by pinching the nose with thumb and index finger for about 5 minutes.
- This compresses the vessels of the Little's area.
- In **Trotter's method** patient is made to sit, leaning forwards and breathe quietly from the mouth.
- Cold compresses should be applied to the nose to cause vasoconstriction.

MANAGEMENT(CONT.)

Cauterisation :

- In anterior epistaxis when bleeding point has been located.
- Cauterisation done by electrocautery or silver nitrate.

Anterior nasal packing:

- If bleeding is profuse and the site of bleeding is difficult to localize, anterior packing packing should be done.
- One or both cavities may need to be packed for 24- 48 hours.
- Systemic antibiotics should be given to prevent sinus infection.

MANAGEMENT(CONT.)

Posterior nasal packing :

- Indicated when posterior bleeding or bleeding persists instead of anterior nasal packing.
- Patient should always be hospitalized.
- Instead of post nasal pack, a Foley's catheter can also be used.
- Post nasal pack should be left for 24-48 hours.

Endoscopic cautery:

- Posterior nasal bleeding sometimes better located with an endoscope.
- It can be coagulated with suction cautery.

MANAGEMENT(CONT.)

SMR or Septoplasty operation:

In case of persistent or recurrent bleeding due to DNS or septal spur.

Ligation of vessels:

- ✓ Indicated when the conservative measures have failed.
- ✓ Ligation of the internal maxillary artery- done in uncontrolled posterior epistaxis. Approach is via caldwell-luc operation.
- ✓ Ligation of ethmoidal arteries- if bleeding above the middle turbinate, not controlled by packing. Approach via external ethmoid incision.
- ✓ Ligation of external carotid artery- above the origin of superior thyroid artery. When bleeding from external carotid system

GENERAL MEASURES IN EPISTAXIS

- ✓ Reassure the patient.
- ✓ Sedative- mild sedation.
- ✓ Keep check on pulse, BP and respiration.
- ✓ Maintain haemodynamics.
- ✓ Blood transfusion if needed.
- ✓ Antibiotics - to prevent sinusitis, if pack is to be kept beyond 24 hours.
- ✓ Investigate and treat the patient for any underlying local or general cause.

MISCELLANEOUS DISORDERS OF NASAL CAVITY.

- ❖ Foreign body.
- ❖ Rhinolith .
- ❖ Nasal myiasis(maggots in nose).
- ❖ Nasal synechia.
- ❖ Choanal atresia.
- ❖ C S F rhinorrhoea.

F. B. NOSE

- ❑ Mostly seen in children.
- ❑ May be organic or inorganic.
- ❑ Pieces of paper, chalk, button, pebbles and seeds are the common objects.

Clinical features:

- Patient may present immediately if the history of FB is known.
- If overlooked, may present with unilateral foul-smelling nasal discharge.

Investigation :

- X-ray PNS OM view- radio-opaque FB is seen.



F.B. NOSE(CONT.)

Treatment :

- ✓ Pieces of paper or cotton can be easily removed with a forceps.
- ✓ Rounded FB can be removed by blunt hook.
- ✓ In babies and uncooperative children, GA given.
- ✓ Maggots removed by applying tenpin oil.

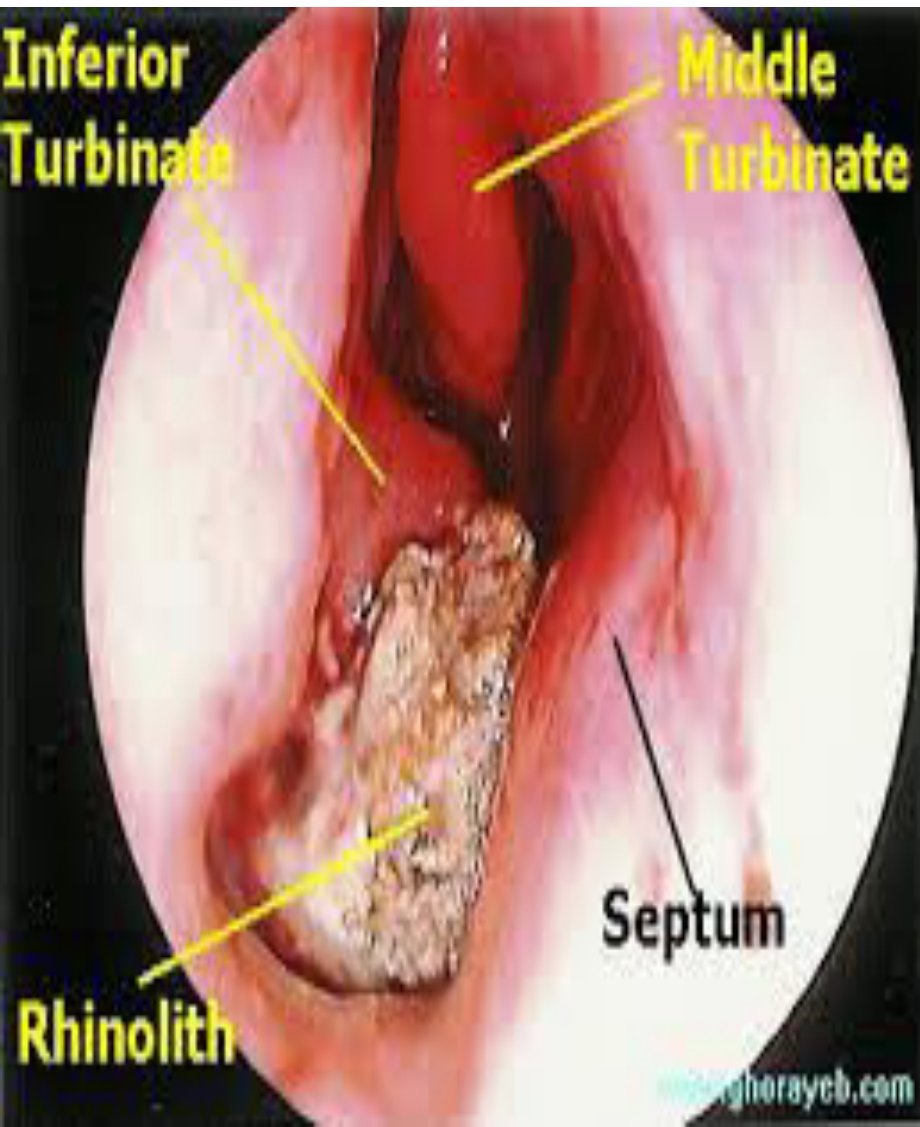
DIFFERENT TYPES OF FB



RHINOLITH

- ❑ Rhinolith is stone formation in the nasal cavity.
- ❑ A rhinolith usually forms around the nucleus of a small exogenous foreign body, blood clot or secretion by slow deposition of calcium and magnesium salts.
- ❑ Over a period of time, it grows into a large, irregular mass which fills the nasal cavity and then may cause pressure necrosis of the septum and or lateral wall of nose.

RHINOLITH



RHINOLITH

Clinical features:

- More common in adults.
- Common presentations are- unilateral nasal discharge and foul- smelling discharge which is often blood-stain.
- Frank epistaxis and neuralgic pain may result from ulceration of the mucosa.

Sings :

- A grey brown or greenish-black mass with irregular surface and stony hard feel is seen in the nasal cavity.
- It is often brittle.
- Sometimes it is surrounded by granulations.

TREATMENT

- Removal under GA through anterior nares.
- Large ones need to be broken into pieces before removal.
- Hard and irregular ones, require lateral rhinotomy.

NASAL MYIASIS (MAGGOTS IN NOSE)

- ❖ Maggots are the larval forms of flies.
- ❖ Flies, particularly of the genus *Chrysomya*, are attracted by the foul smelling discharge from atrophic rhinitis, syphilis, leprosy or infected wounds and lay eggs, which within 24 hours hatch into larvae.
- ❖ In our country, mostly seen from the month of August to October.



MAGGOTS

Nasal Maggots
Medchrome.com



NASAL MYIASIS(CONT.)

Clinical features:

- ✓ In first 3 or 4 days- intense irritation, sneezing, lacrimation and headache.
- ✓ Thin blood-stained discharge oozes from the nostrils.
- ✓ The eyelids and lips become puffy.
- ✓ On 3rd or 4th day that maggots may crawl out of the nose. Pt. has foul smell surrounding him.
- ✓ Maggots cause extensive destruction to nose, sinuses, soft tissue of face, palate and eyeball.
- ✓ Fistulae may form in the palate or around the nose.
- ✓ Death may occur from meningitis.

NASAL MYIASIS(CONT.)

Treatment :

- All visible maggots should be picked up with forceps.
- Instillation of chloroform water and oil kills them.
- Nasal douche with warm saline is used to remove slough, crusts and dead maggots.
- Pt. should be isolated with a mosquito net to avoid contact with flies.
- Instruction for nasal hygiene.

Thank you

All