Nasal Cavity-I
Lesson Plan

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- Parts of Nasal Cavity:
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- Roof of Nasal Cavity
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Introduction

- Internal nose is divided into right and left nasal cavities by a nasal septum.

- Each nasal cavity communicates with the exterior through nostril (naris).

- Each nasal cavity communicates with the nasopharynx through posterior nasal aperture (choana).
Parts of Nasal Cavity

- 2 parts:
  - Vestibule
  - Nasal cavity proper

**Vestibule**
- A small anteroinferior part.
- Lined by skin.

**Nasal Cavity Proper**
- Large posterosuperior part.
- Lined by mucosa.
Vestibule

- Its upper limit on lateral wall of nasal cavity is marked by **Limen nasi**.

- Its medial wall is formed by **columella**.
Nasal Cavity Proper

Boundaries-

- Roof.
- Floor.
- Medial wall (Nasal Septum).
- Lateral wall.
Roof of Nasal Cavity

- Divided into 3 parts:
  - Anterior 1/3rd.
  - Middle 1/3rd.
  - Posterior 1/3rd.

Anterior 1/3rd –
- Slopes downwards and forwards.

Formed by:
- Nasal spine of Frontal bone.
- Nasal bone.
- Junction of Septal and Lateral cartilages
**Roof of Nasal Cavity contd...**

**Middle 1/3⁴ –**
- Horizontal.

**Formed by:**
- Cribiform plate of Ethmoid bone.
- Through the cribiform plate, **olfactory nerves** enter the cranial cavity.
Roof of Nasal Cavity contd…

Posterior 1/3ʳᵈ –
- Slopes downwards and backwards.

Formed by:
- Anterior surface of body of Sphenoid bone.
Floor of Nasal Cavity

- Almost horizontal.

**Formed by:**
- Upper surface of hard palate.

**Anterior 3/4th –**
- By palatine process of Maxilla.

**Posterior 1/4th –**
- Horizontal plate of Palatine bone.
Nasal Septum
Introduction

- A median osseocartilaginous partition between two nasal cavities.
- Forms the medial wall of nasal cavity.
Parts of Nasal Septum

- 3 parts:
  - Bony part.
  - Cartilaginous part.
  - Membranous part.

**Framework of Bony Part**
I. Ethmoid - perpendicular plate
II. Vomer
III. Frontal - nasal spine
IV. Nasal - crest
V. Sphenoid - crest
VI. Maxilla - palatine process
VII. Palatine - horizontal plate
Cartilaginous Part

Framework of Cartilaginous Part-

- Septal cartilage
- Medial crura (septal processes) of 2 major alar cartilages.
Columellar Septum-

- Medial crura of 2 major alar cartilages are united together in the midline by a fibrous tissue to form columellar septum (columella).
Lateral crus

Medial crus

of Major Alar Cartilage

Septal cartilage (septum)
Membranous Part

- Between the columella and caudal border of septal cartilage, a small portion of septum is made up of double layer of skin and is referred as membranous septum.

- Both columellar and membranous parts of the septum are freely movable from side to side.
Arterial Supply of Nasal Septum

- Septal b/o Anterior Ethmoidal artery
- Septal b/o Posterior Ethmoidal artery
- Septal b/o Sphenopalatine artery
- Septal b/o Greater Palatine artery
- Septal b/o Superior labial artery
Little’s Area

- An area in anteroinferior part of nasal septum just above the vestibule.

- It is highly vascular.

- In this area, an arterial plexus is formed by the following arteries:
  - Septal b/o Anterior Ethmoidal artery
  - Septal b/o Sphenopalatine artery
  - Septal b/o Greater Palatine artery
  - Septal b/o Superior labial artery.

- This plexus is known as Kiesselbach’s plexus.

- In Little’s area, submucous venous plexus is also more marked.

Applied aspect-
- Little’s area is the **commonest site of epistaxis** (bleeding through the nasal cavity) in children and young adults usually due to finger nail trauma during pricking of nose.
Venous Drainage of Nasal Septum

- In nasal septum, veins accompany the arteries.
- A venous plexus is formed beneath the mucosa.
- Veins drain into:
  - Facial vein.
  - Pterygoid venous plexus.
  - Pharyngeal venous plexus.
Nerve Supply of Nasal Septum

**Anterosuperior Part**
- Internal nasal nerve (a branch of Anterior Ethmoidal Nerve).

**Anteroinferior Part**
- Anterior Superior Alveolar Nerve (a branch of Infraorbital nerve).

**Posterosuperior Part**
- Medial posterior superior nasal nerves (branches of Pterygopalatine ganglion).

**Posteroinferior Part**
- Nasopalatine nerve (a branch of Pterygopalatine ganglion).

**Olfactory Part (upper 1/3rd of nasal septum just below cribriform plate)**
- Olfactory Nerves.
Lymphatic Drainage of Nasal Septum

Anterior ½-

• Drains into:
  • Submandibular lymph nodes.

Posterior ½-

• Drains into:
  • Retropharyngeal lymph nodes.
Applied Aspects

- Nasal Septum is seldom exactly in median plane.
- Usually it bulges to right or left side, more frequently to the right.

**DNS [Deviated Nasal Septum]-**
- An important cause of nasal obstruction.

**Sex Predilection-**
- Male>Female.

**Etiology-**
- Trauma.
- Developmental error.

**Clinical Features-**
- Mechanical nasal obstruction.
- Sinusitis.
- Headache etc.

**Treatment-**
- **Surgical correction-**
  - SMR (Submucosal resection).
  - Septoplasty.
Applied Aspects contd...

Supratip depression of External Nose:

- Septal cartilage provides support to dorsum of anterior 2/3rd of nose.

- **Excessive removal** of septal cartilage during submucosal resection can lead to Supratip depression of External Nose.

- **Destruction** of septal cartilage due to disease may result into this deformity.
Thank You!
Your Queries Please!!!