

NORMAL RADIOGRAPHIC ANATOMICAL LANDMARKS

MAXILLA

→ Radiolucent and Radiopaque Landmarks of maxilla

Radiolucent - Intermaxillary suture
nasal fossa
Incisive foramen
lateral fossa
nose
nasolacrimal canal

Radiopaque - anterior nasal spine
nasal septum
floor of nasal fossa
nasolabial fold
maxillary sinus
Zygomatic process
maxillary tuberosity
Alveolar notch

① Radiographic anatomy : maxillary anterior region

→ Nasal septum :- appear as a radiopaque band in the midline above the apex of incisor

→ Anterior nasal spine :- appear as radiopaque structure

located in the midline approx. 1.5-2.0 cm above the alveolar crest or just below the junction of

- nasal septum & the inferior outline of nasal fossa
- The shape of shadow is → Inverted triangle
- when superimposed over the incisive foramen, it gives the foramen → heart shape

→ Incisive foramen :- appear as ovoid radiolucent area in the midline b/w the roots of central incisors

- shape is variable and may appear as - round or heart shape

→ Intermaxillary suture - thin radiolucent line b/w 2 portions of the maxilla

- It extends the crest b/w the CI superiorly anterior nasal spine

→ Nasal fossae :- Nasal fossae appear as radiolucent spaces that represent the nasal cavity on either side of nasal septum

- Sometimes radiopaque shadows of inferior conchae may seen extending from the right and left lateral walls towards septum
- This landmark usually seen when high vertical angulation is employed.

→ Inferior nasal concha :- appear as diffuse radiopaque mass or projection within the nasal cavity.

→ Lateral fossa :- radiolucency result from a depression above and posterior to lateral incisor

- Inferior Border of the nasal fossae:-
 - appear as radiopaque line extending bilaterally away from the base of anterior nasal spine
- Tip of the nose:-
 - Image of the soft tissue of the tip of the nose appear as a uniform slight opacity with sharp border.
 - steep vertical angulation will usually make it evident over the roots of the Incisors.
- Inverted Y-line of Enis:-
 - In canine projection, the superimposition of the floor of the sinus and nasal cavity may form an inverted Y-line

② Radiographic anatomy: Maxillary Posterior region

- Zygomatic process of maxilla:-
 - Zygomatic process of the maxilla is a "U-shaped" radiopaque line; seen in the region of first and second molars
 - seen when excessive vertical angulation is used
- Border of maxillary sinuses:-
 - Border appear thin and delicate radiopaque lines that represent a thin layer of cortical bone
 - sinuses extend from distal aspect of the canine

to the posterior wall of maxilla above the tuberosity

- floor of maxillary sinus -
 - appear clearly delineated by delicate radiopaque lines
- septum of the sinus -
 - septa appear as radiopaque lines within the maxillary sinus
- Zygomatic process - appears as U shaped / J shape radiopacity superior to maxillary molars
 - represent attachment of the zygomatic bone to the maxilla
- Zygoma - appear as diffuse radiopaque band that extends distally from the zygomatic process of the maxilla
- medial and lateral pterygoid plates :-
 - lie immediately posterior to the tuberosity of maxilla and cast a radiopaque shadow
- maxillary tuberosity - appear as radiopaque structure that extend distally and upward from posterior to maxillary sinus
 - represent the end of maxilla
- Alveolar process -
 - appear as radiopaque spine
 - distal to the tuberosity of maxilla & extend downward

- Coronoid process :-
 - appear as triangular radio-opaque str with its apex directed superiorly and anteriorly, superimposed over the region of max. 3rd m.
- Nasolacrimal duct :-
 - seen in occlusal view of maxilla as round radio-lucent area, superimposed on post. region of hard palate
- Nutrient canal - appear as narrow radiolucent band bounded by 2 thin radiopaque lines

MANDIBLE

Radiolucent -

- Symphysis
- mental fossa
- submandibular gland fossa
- mental foramen
- mandibular canal
- nutrient canals
- lingual foramen

Radioopaque -

- genial tubercles
- mental ridge
- mylohyoid ridge
- External oblique ridge
- Inferior border
- Coronoid process
- Internal oblique ridge

(A) Mandibular Anterior region -

① Nutrient Canal - are radiolucent lines of fairly uniform width running vertically from inferior dental canal directly to the apex of a tooth or into interdental space

② Genial tubercle - appear as radio-opaque ring like shadow in the midline below the incisor roots

③ Inferior border of mandible - appear as dense, radioopaque band of bone

④ Symphysis - seen as radiolucent line on the midline

* Symphysis closes by the age of 1 year & hence not visible on the radiograph subsequently

⑤ Lingual foramen :-

- It is set in the midline deep to the apices of anterior teeth

- appear as small radiolucent dot at the symphysis area usually surrounded by radio-opaque fib.

⑥ mental ridge :-

- Radio-opaque line below the apices of ant. teeth

- It is bony prominence found on labial aspect of mandible near its inf. border & extended from premolar region to symphysis area

⑦ mental fossa - represent a radiolucent depression on labial aspect of mandible overlying root of the incisor

⑧ Mandibular posterior region :-

- ① mental foramen - It is a radiolucent site of variable configuration seen b/w lower border of mandible & crest of alveolar process, below the apex of premolars.
★ posⁿ of foramen depend on projection of X-ray and age of the patient.
- ② External oblique ridge - is the continuation of ant. border of ramus.
- appear as radio-opaque band near alveolar crest in 3rd molar region.
- ③ mandibular canal - is a dark shadow with thin radio-opaque superior & inferior borders seen below the molar roots.
- ④ mylohyoid ridge - appear as radio-opaque band running diagonally downward and forward from the area of 3rd molar to premolar region appear at level of apex of post. teeth.
- ⑤ Submandibular gland fossa -
- Concave area accommodating submandibular gland.
- appear as radiolucent area with sparse trabecular pattern just below the mylohyoid ridge.
- ⑥ Internal oblique ridge - appear as radio-opaque line descending downward & forward from coronoid process stop at 3rd molar area & continue with mylohyoid line, placed below external oblique ridge.