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**DEPARTMENT OF RADIOGRAPHY AND IMAGING TECHNOLOGY**

**II YEAR**

**FOREIGN BODY LOCALIZATION**



# INTRODUCTION

- Foreign bodies are objects which may enter body tissues and cavities under a variety of circumstances.
- Foreign body placement is voluntary or involuntary.
- The foreign body may cause infection or can obstruct the passageways.



# METHODS OF ENTRY



The main methods of entry are,

- Percutaneous foreign bodies
- Ingested foreign bodies
- Inhaled foreign bodies
- Inserted foreign bodies
- Transocular foreign bodies



# PERCUTANEOUS FOREIGN BODIES



- When the object is accidentally entered into the body such as metal pieces, glass or wood chip.
- It can cause infections, inflammation or damage to the surrounding tissues.
- For evaluation of the percutaneous foreign body, Antero-posterior or postero-anterior and lateral projection of the affected limb is taken.



# INGESTED FOREIGN BODIES



- The object is unintentionally swallowed, such as coins, pins, beads, fish bone, needles and dentures.
- The objects larger than 2 cm cannot pass through the pylorus.
- It may cause obstruction or perforation of the intestine.
- The patient should be asked to undress completely and wear hospital gown for the examination.
- The approximate time of swallowing the object and the site of any localized discomfort should be noted on the request card along with time of examination.



# INGESTED FOREIGN BODY



# INGESTED FOREIGN BODY







# ASSESSMENT



- Define foreign body localization.
- What are the different methods of entry of a foreign body?
- What is ingestion of foreign body?





- It is important to gain the patient's cooperation, especially in young children, since a partially opaque object may be missed if there is any movement during the exposure.
- Exposure is made on arrest respiration.
- For evaluation of the ingested foreign body, the neck Antero-posterior and lateral, chest antero-posterior and lateral and abdomen antero-posterior projections are taken.
- If the patient is young child, then the examination is usually restricted to a single antero-posterior projection to include the chest, neck and abdomen.



# INHALED FOREIGN BODIES



- The object is accidentally inhaled and stuck in an airway.
- If the foreign body is trapped in the lung, it requires bronchoscopy.
- For evaluation of the inhaled foreign body, the neck Antero-posterior and lateral and chest postero-anterior and lateral projections are taken.
- Alternatively, an antero-posterior chest image is acquired when examining children.



## INSERTED FOREIGN BODIES



- The object is inserted into the cavities or orifices of the body, such as a pen, pin or other objects inserted into the nasal passages or in an ear.
- For evaluation of the inserted foreign body, the Antero-posterior and lateral projections of the affected part is taken.
- Ultrasound should be the initial modality selected for the detection of an intrauterine contraceptive device.
- It is also very effective in the detection of soft tissue foreign bodies with the advantage of incurring no radiation burden where it is available.



# INSERTED FOREIGN BODY





# TRANSOCULAR FOREIGN BODIES



- The object is accidentally entered the orbital cavity such as small fragments of metal,brick,stone or glass associated with industrial,road or domestic accidents.
- For evaluation of the transocular foreign body,the occipitomental 35 degree for the orbits(modified),optic foramina Postero-anterior oblique is taken.

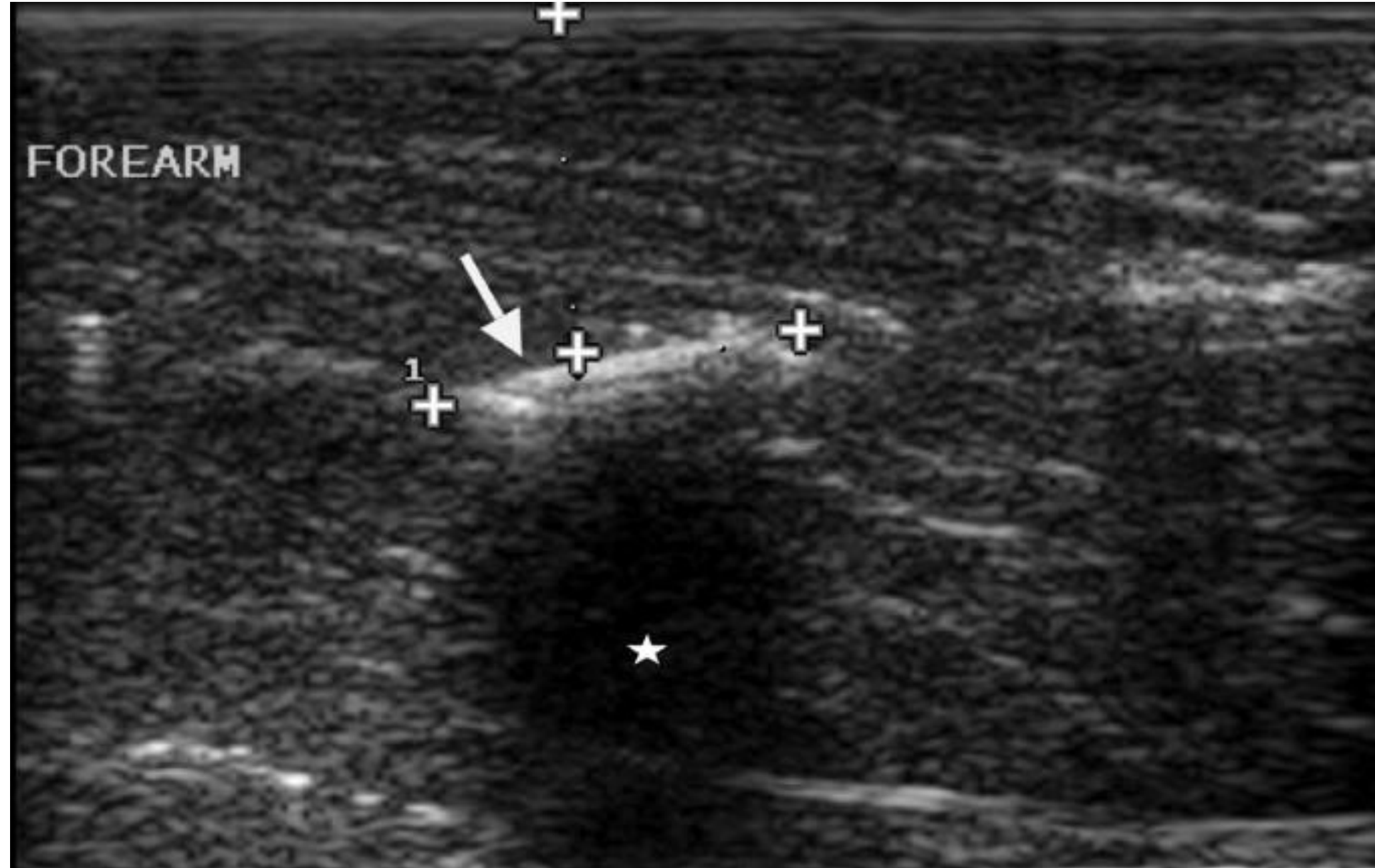


- Plain radiography is the first modality for investigation of a suspected radio-opaque foreign body in the orbit.
- For further investigation or assessment of a non – opaque foreign body,CT scanning can be very useful.
- Radiographic localization may be carried out in two stages:
  - to confirm the presence of an intra-orbital radio-opaque foreign body.
  - to determine whether the foreign bdy is intra- or extra ocular.





# FOREIGN BODY IDENTIFIED IN ULTRASOUND







## TREATMENT



- The treatment for removing the foreign body may include the following:
- A suction machine – can be used to remove the object from the nose or ear.
- A bronchoscope can be used to remove the object from the airway.
- An endoscope can be used to remove the object from the stomach or rectum.
- Surgery is necessary if removal of the object is not possible.



# GENERAL GUIDELINES FOR RADIOGRAPHY



- Before performing the x-ray examination, the radiographer should ensure that no confusing material should be present on the patient's cloth, x-ray table or on image receptor.
- The patient is asked to remove all the clothings, jewelry, hair pin and other material before the procedure.
- AP, PA and lateral views demonstrates the appropriate location of foreign bodies in the limbs. Usually two projections AP and lateral are taken.



- The tangential projection is used to demonstrate the depth in foreign bodies in the face, chest and abdominal walls.
- Low kVp technique may be useful for demonstrating foreign bodies such as glass or other low-density materials.
- High kVp is used to evaluate the position of the inhaled foreign bodies and short exposure is given to prevent geometrical unsharpness.
- CT or MRI is useful to demonstrate the location of a foreign body that is not viewed on the radiographs or ultrasonography.



**THANK YOU**