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OCULAR DISEASE

TRAUMA TO THE GLOBE



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Terminology

- **Closed injury** is commonly due to blunt trauma. The corneoscleral wall of the globe is intact.
- **Open injury** involves a full-thickness wound of the corneoscleral envelope.
- **Contusion** is a closed injury resulting from blunt trauma. Damage may occur at or distant to the site of impact.



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- **Rupture** is a full-thickness wound caused by blunt trauma. The globe gives way at its weakest point, which may not be at the site of impact.
- **Laceration** is a full-thickness defect in the eye wall produced by a tearing injury, usually as the result of a direct impact.



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- **Lamellar laceration** is a partial-thickness laceration.
- **Incised injury** is caused by a sharp object such as glass or a knife.



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- **Penetrating** injury refers to a single full-thickness wound, usually caused by a sharp object, without an exit wound. A penetrating injury may be associated with intraocular retention of a foreign body.
- **Perforation** consists of two full-thickness wounds, one entry and one exit, usually caused by a missile.

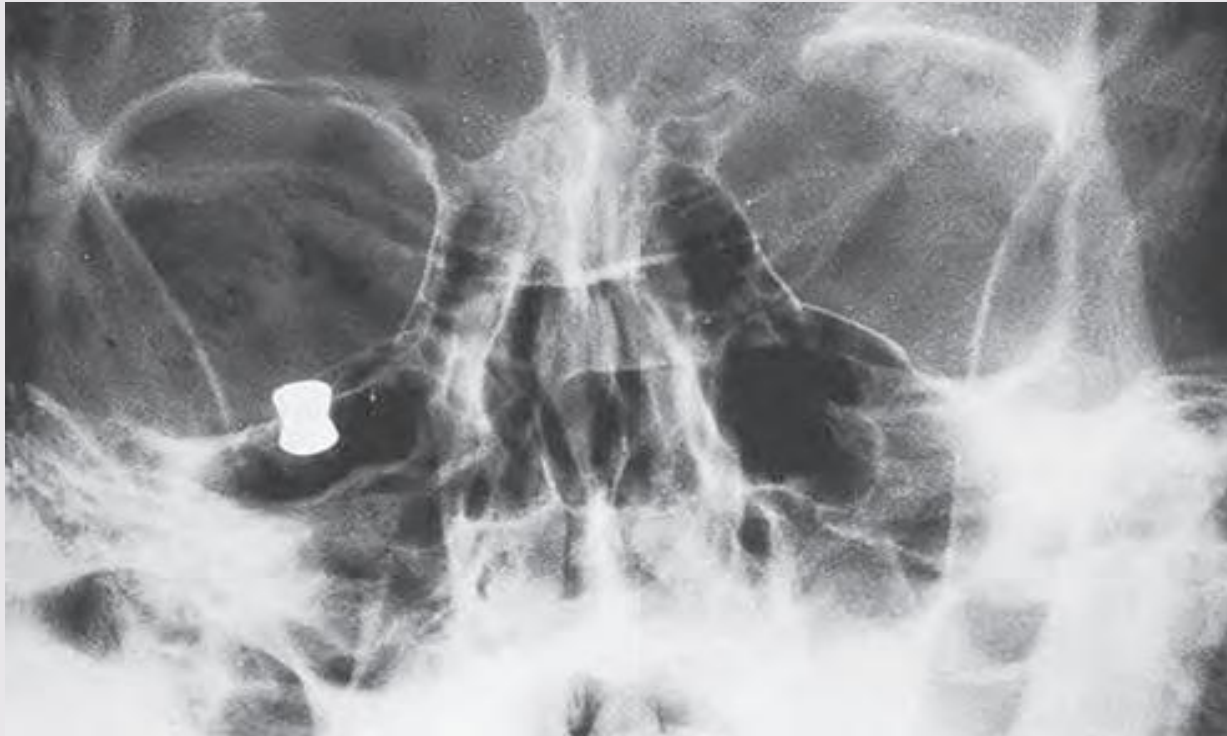


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Investigations

- **Plain radiographs** may be taken when the presence of a foreign body is suspected



Plain radiograph showing a lead air gun pellet



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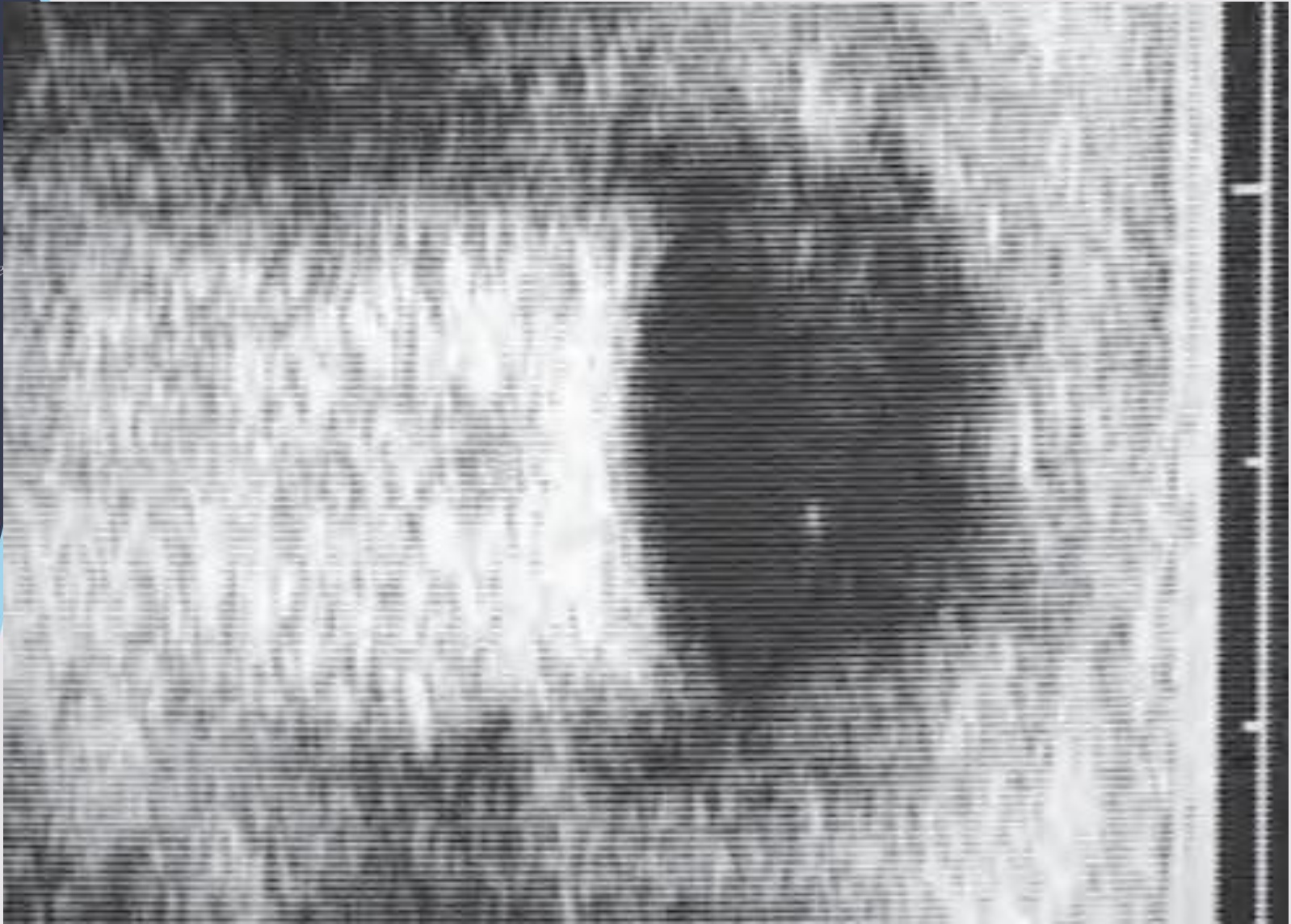
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- **Ultrasonography** may be useful in the detection of intraocular foreign bodies, globe rupture, suprachoroidal haemorrhage and retinal detachment;
- It should be performed as gently as possible if there is the risk of an open globe injury,
- Strictly avoiding any pressure on the globe. It is also helpful in planning surgical repair



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foreign body demonstrated by ultrasonography



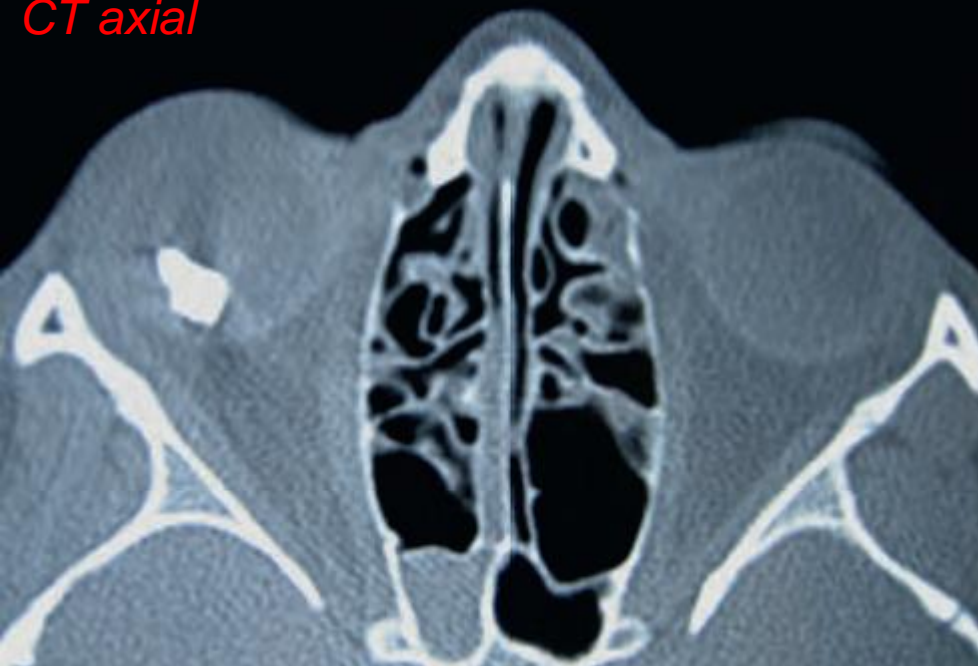
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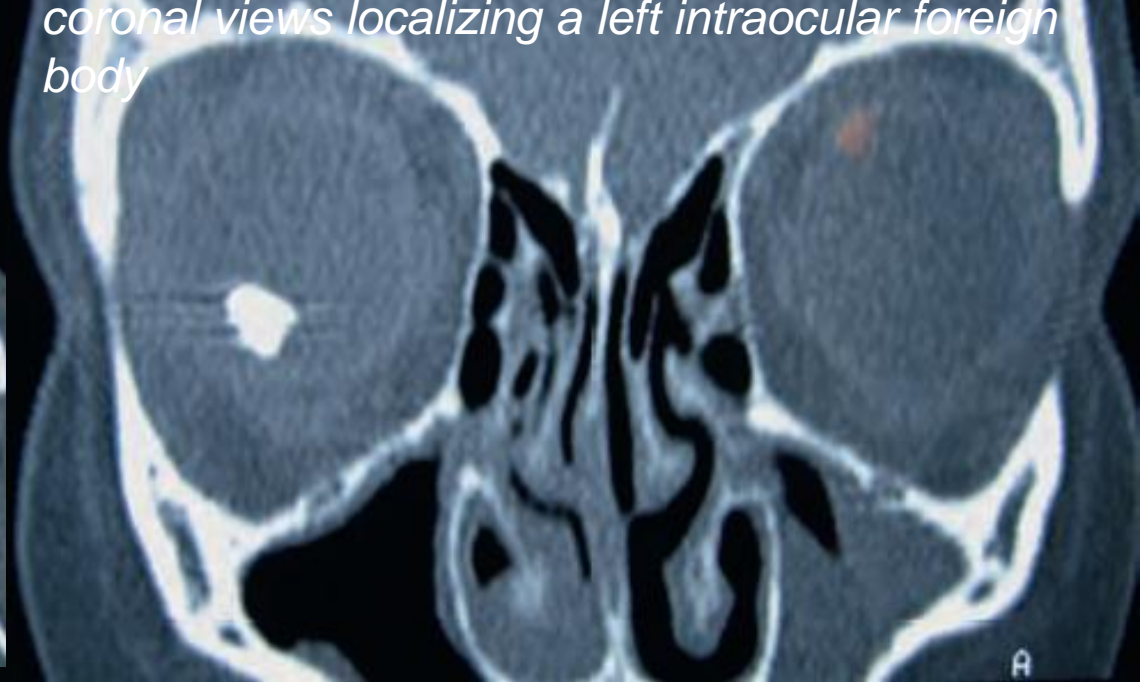
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- **CT** is superior to plain radiography in the detection and localization of intraocular foreign bodies.
- It is also of value in determining the integrity of intracranial, facial and intraocular structures

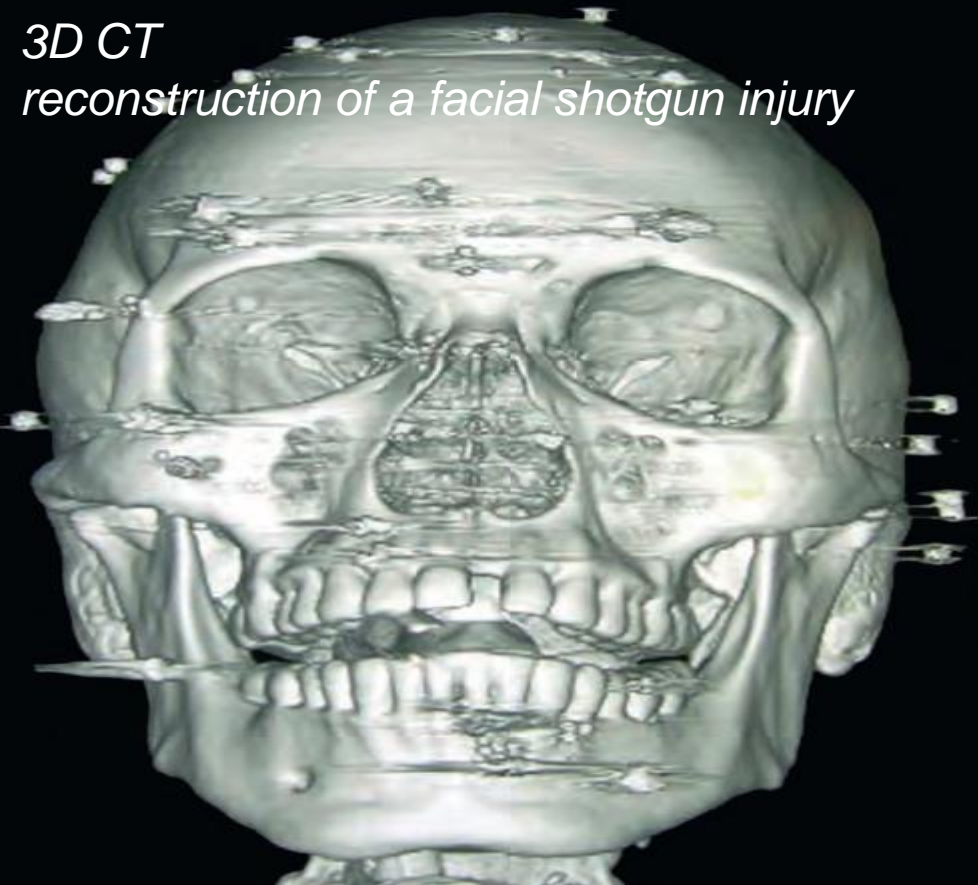
CT axial



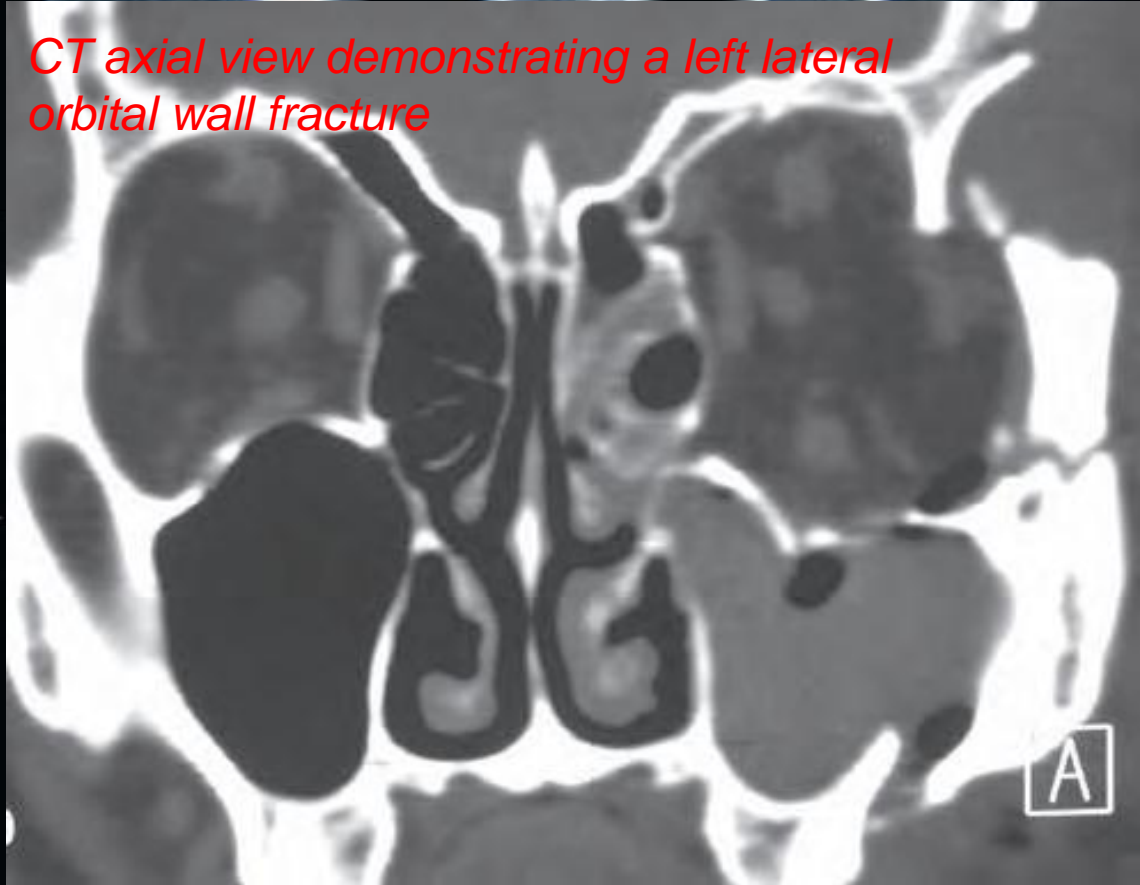
coronal views localizing a left intraocular foreign body



3D CT reconstruction of a facial shotgun injury



CT axial view demonstrating a left lateral orbital wall fracture





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- **MRI** is more accurate than CT in the detection and assessment of injuries of the globe itself, such as an occult posterior rupture, though **not for bony injury**.
- **Electrodiagnostic** tests may be useful in assessing the integrity of the optic nerve and retina, particularly if some time has passed since the original injury and there is the suspicion of a retained intraocular foreign body