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MAXILLOFACIAL RADIOLOGY

Double type III dens invaginatus

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CASE

A 75-year-old female presented for a follow-up appointment for the construction of an implant-retained prosthetic nose. During the appointment, a prosthetic pin unintentionally dislodged into her nasopharynx. The following serial radiographs (Fig 1-3) were taken to determine the location of the pin, with a main concern of dislodgement into the patient's lungs.

In Fig 3, the pin (black arrow) can be seen in the colon. This is an indication that the pin was not aspirated but ingested, implying that no further medical intervention was necessary.

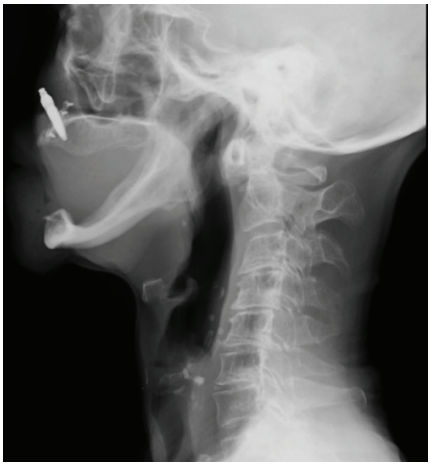

Figure 1: Lateral C-spine radiograph

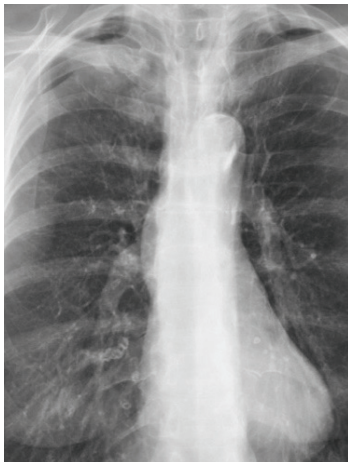

Figure 2: Posteroanterior chest radiograph

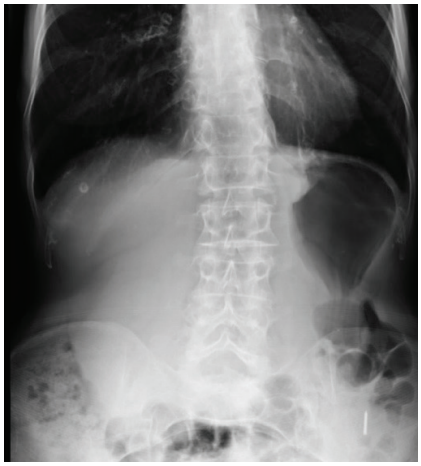

Figure 3: Posteroanterior abdominal radiograph

INTERPRETATION

Foreign body ingestion is often seen in children, the elderly, alcoholic individuals, or the mentally impaired, and may intentionally occur in psychiatric patients and prisoners.[1] Dentures and small orthodontic appliances are the most common objects to be accidentally ingested in adults.[1]

In the gastrointestinal tract (GIT), many ingested objects will pass within a few days to a month without any intervention, with a small amount requiring non-surgical or surgical intervention.[2] In general, objects less than 60mm in length and 25mm in diameter have a 90% chance of passing through the pylorus and the ileocecal valve.[3] Sharper objects are unlikely to pass through the curvatures of the intestine and may often result in intestinal puncture, oesophageal perforation, or haemorrhage, all of which can be fatal.[4]

Dental practitioners must be able to recognise the signs and symptoms of air and gastric obstruction if a dental object was ingested. The need for proper patient communication if this problem were to occur is crucial. If the patient isn't showing any signs of gagging, coughing, choking, dysphagia, abdominal pain, wheezing, stridor or chest pain, the oral cavity must be thoroughly examined for the foreign object.[5] Once it is clear the object has passed the oropharynx, a radiographic examination should be performed to determine if the object has entered the GIT or respiratory tract. Posteroanterior and lateral chest radiographs, as well as abdominal radiographs, are recommended for the detection of a foreign object.[2,4] For radiolucent objects, additional diagnostic aids such as computed tomography (CT), magnetic resonance imaging (MRI), endoscopy and diagnostic bronchoscopy may aid in detecting their anatomic location.[2]

As soon as a patient starts showing signs of a compromised airway and cannot dislodge the object by forcibly coughing, the Heimlich maneuvre should be performed to dislodge the laryngeal obstruction.[5] If abdominal thrusts are ineffective in dislodging the object, basic emergency life support should be carried out until proper medical intervention is attained.[3]

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Objects lodged in the oesophagus usually require surgical intervention and are often removed endoscopically.[4] However, if there are signs of impaction, perforation, or sepsis, a laparotomy or open surgery may be indicated.[1] If patients ingested blunt objects less than 60mm in length and 25mm in diameter, conservative management is advised. Weekly radiographs are recommended to observe the object passes safely. Failure of the object to pass will result in endoscopic removal or laparoscopy.[4]

Inhalation of a foreign body can be much worse and is regarded as a medical emergency.[2] Aspiration of foreign bodies tend to be more often trapped in the right bronchial tree; this is due to the right bronchus being more vertical.[2] Perforation and pneumothorax can occur if the foreign body is sharp or pointed. Signs of pulmonary aspiration could include acute dyspnoea, asphyxia, laryngeal oedema, and cardiac arrest. Recommended treatment is the immediate retrieval of the foreign body by laryngoscopy.

To prevent the inhalation or ingestion of dental objects, dentists should ensure the use of rubberdam during endodontic and restorative procedures. Attachment of dental floss to files is recommended in case they are dropped. Additional preventative measures that could be considered are high vacuum suctions, gauze throat packs, customized impression trays, high-viscosity impression material, and placing the patient in a more upright position in the dental chair.[3]

AUTHORS DECLARATION

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Conflict of Interest

The authors declare that they have no conflict of interest.

Ethics approval: The University of The Western Cape Ethics Committee has stated that ethics clearance was not required for case reports.

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