

RISK MANAGEMENT ARTICLE

Managing the problem of foreign object ingestion and aspiration

Mr. Smith is an anxious 86-year-old patient who is new to your practice. You're placing a crown on his molar when he suddenly jerks his head, knocking your hand. You lose your grip on the crown and Mr. Smith swallows it. Do you know what steps to take next to manage the situation and avoid ending up in court?

A real risk

Accidental ingestion of dental objects is a real risk, particularly in children. Others at risk for foreign body ingestion include the elderly, patients with psychiatric disorders or impaired cognition, and patients with high anxiety about their treatment. They may move suddenly, making the dentist lose control of an instrument or small object, which is what happened with Mr. Smith. Use of local anesthetics and altered consciousness during I.V. sedation can also increase the risk of accidental ingestion.

Many dental objects can be swallowed, including prostheses, burs, endodontic files, extracted teeth, implant parts, cotton rolls, gauze packs, impression materials, rubber dam clamps, and parts of teeth or old restorative materials that fractured during extractions or use of a high-speed handpiece. The good news is that most foreign bodies pass through the gastrointestinal (GI) tract without problems. However, ingestion of sharp objects can cause complications such as intestinal perforation and peritonitis, as well as intestinal obstruction. Patients with adhesions from previous abdominal surgery and those with comorbid intestinal diseases such as Crohn's disease may be at higher risk for complications.

A review of literature related to accidental foreign body ingestion found that 10 to 20 percent of cases require nonsurgical intervention, and 1 percent or less require surgery.

Into the oropharynx

About 60 percent of foreign bodies are trapped at the oropharyngeal level, rather than in the GI tract. What should you do if this occurs? First, remain calm and don't show fear. The patient will pick up on your demeanor.

Place the fingers of your nondominant hand flatly over the tongue and the mandibular teeth to prevent swallowing while you quickly put the patient in Trendelenberg position. Then use your dominant hand to grab the object with cotton pliers, taking care not to push the object further back. If you don't see the object, put the person in an upright position and have him or her cough to try to expel it.

Assessing the patient's airway for partial or complete obstruction is essential. Patients who can speak have a partial obstruction, so you can continue to ask them to cough. Patients with a complete obstruction can't cough effectively and you may hear stridor. In this case, try abdominal thrusts.

The patient will quickly lose consciousness if the airway isn't restored, so call 9-1-1 and be prepared to perform cardiopulmonary resuscitation until emergency medical services arrives.

Because of the anatomical structure of the lungs, objects most likely pass into the right bronchus. Patients who aspirate an object usually require hospitalization and should be checked medically even if the object is

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retrieved and the patient has no remaining signs or symptoms. Aspiration of foreign objects can lead to complications such as pulmonary abscess, pneumonia and bronchiectasis.

Into the GI tract

What if instead of aspiration, the object passes into the GI tract? First assess the patient's airway to be sure it's patent. If the patient is breathing normally and has no signs and symptoms, explain what has happened and what actions you plan to take.

The next step is to obtain radiographs of the abdomen and chest (posteroanterior and lateral) to determine the location of the object. Computed tomography may also be used, particularly if there is reason to suspect perforation. If indicated, you or a staff member should go with the patient to obtain the radiographs; don't have the patient drive alone. Endoscopy is necessary if the ingested object is in the esophagus, if it is not radio-opaque, if it is sharp or elongated, if there are multiple items, or if the object is large.

If the object is below the esophagus and is less than 2 cm wide or less than 6 cm long—and the patient is stable—you can allow the patient to go home with instructions on what to do should he or she develop signs and symptoms of obstruction or other complications. You should follow up with the patient 24 hours later. Refer patients with larger or sharp objects to a gastroenterologist immediately.

Tell patients to examine their stools to see if the object passes; parents should examine a child's stools. Having patients eat a diet high in roughage and soft food items such as bananas may help facilitate passage. A series of radiographs may be used to track the progress of the object. If the patient does not excrete the object after two weeks, refer the patient to a gastroenterologist because endoscopy or surgery may be needed.

Documentation

You must document the event thoroughly to protect yourself in the case of a lawsuit. Be sure to include:

- preventive measures that were taken before the incident occurred
- patient signs and symptoms
- how the patient was transported to where the radiographs were taken
- results of radiographs
- patient follow-up instructions and that the patient understood the instructions
- your follow-up of the patient
- referrals to other physicians; also place a copy of the referring physician's report in the medical record

If the patient chooses to decline a referral, document it in the medical record, including that you explained the potential for negative outcomes should the referral not occur. In addition, report the incident to your malpractice insurance company.

Prevention and quick action

Being aware of factors that increase the risk for ingesting a foreign object and taking quick action should it occur will help reduce the likelihood of legal action and prevent serious injury to the patient.

Preventing ingestion of foreign bodies

Here are some tips for preventing a patient from swallowing a foreign body.

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- Obtain a history to identify risk factors for ingestion of foreign bodies.
- Use a rubber dam for all restorative and endodontic procedures.
- Have an assistant who can use high-volume suction to retrieve objects in the oropharynx. This isn't always feasible, of course, but could be particularly helpful with patients at high risk for problems.
- Place a medium-to-large gauze square, tied to a long piece of dental floss, across the back of the oral cavity to catch amalgam debris or small objects.
- Use a floss ligature on objects such as rubber dental clamps, cast crowns and bridges, and elastic separators and space maintainer appliances.
- Do not use cheap instruments, which are more likely to break.
- Replace worn instruments to avoid breaking off of tips.
- Have cotton pliers available for retrieving objects.
- Add a pair of Magill intubation forceps to your emergency cart to retrieve objects that are visible and in the oropharynx. (Do NOT use these forceps to attempt retrieval of nonvisible items, and you should be trained on how to use them.)
- Tell patients that if an object falls on the tongue, they should try not to swallow, but instead turn their head to the side.
- Be sure that you and your team are trained in cardiopulmonary resuscitation.
- Have a plan in place for handling these types of situations and review it on a regular basis.

Resources

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