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Minimally Invasive Surgery for Rural Surgeons – Lesson 21

Cystoscopic Removal of Coin from Mid Esophagus

There have been many case series and case reports on different methods of esophageal coin removal in pediatric patients, each with their own advantages and disadvantages. In rural areas, especially missionary hospitals, where Bougienage is not easily accessible and fluoroscopy is too expensive, use of a cystoscope with alligator forceps (foreign body forceps) under general anesthesia is an alternative option for removing graspable objects from the upper and lower esophagus. In this report, multiple methods are described for an attempt to remove a rupee coin from a four year old boy complaining of difficulty swallowing and chest pain. The coin was ultimately removed by cystoscope.

Esophagogastroscopy with a Pentax gastroscope confirmed the presence of the coin in the mid esophagus. A "W" shaped grasper was not available for removal of the foreign body and hence unsuccessful attempts were made with biopsy forceps. This was carried out under dissociative anesthesia with Ketamine. It was decided that it would be safer to intubate and do the procedures under general anesthesia. Blind attempts were made with Magill's forceps but they were not long enough. Desjardins forceps were attempted, both blindly and under guidance of a gastroscope and an ureterorenoscope. Still unsuccessful, basketing of the coin with Dormia baskets was tried, first with an ureterorenoscope and then with a gastroscope. A nasogastric tube was passed to deflate the stomach to try and pull out the coin.

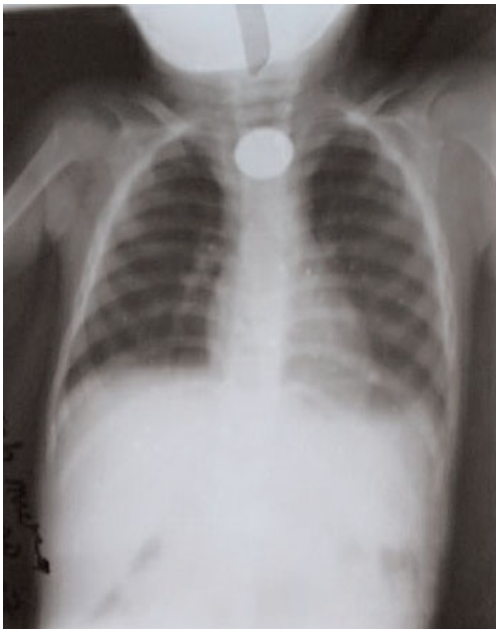
Finally a cystoscope and alligator forceps (foreign body forceps) were used to pull the coin out.

This procedure took only a few minutes.

DISCUSSION

There seems to be some disagreement in current literature about the need for immediate removal of coins in the esophagus, as studies have shown moderate success rates of spontaneous passage, but removal should at least be considered after the researched observation time has lapsed. Literature search through Pub Med yielded articles referencing many methods of coin retrieval, including: endoscopy under general anesthesia, guided Foley catheter with a balloon, Bougienage dilation with passage into the stomach, fluoroscopic assisted "penny pincher", and use of Magill Forceps.

Although Endoscopy was originally the method of choice for removal of foreign bodies in the esophagus, cheaper methods have been discovered, such as Foley catheter extraction which is highly successful and safe. However, it requires the guidance of a fluoroscope, which is not common in rural hospitals. A related but less cited "Penny Pincher" method was described for 20 patients, which safely utilizes endoscopic graspers and a soft catheter, but also requires the use of fluoroscopy. Bougienage dilation has been suggested as a safe technique for induced passage into the stomach and patients can be discharged quickly, but again, possession of such equipment is rare in rural hospitals.



Although Magill forceps have recently been cited as a simple method with a high success they are only useful for objects lodged in the upper esophagus. Since it is suggested that most foreign bodies ingested by children remain in the upper esophagus, this method should be available in hospitals. For coins lodged in the mid to lower esophagus, cystoscopy should be considered when fluoroscopy or Bougienage is not available.

REFERENCES

1. Cystoscopic removal of coin from Mid Esophagus: A descriptive case report., J. Gnanaraj, A. Allan, *Rural Surgery* Vol. 4, No. 1, January 2008.

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