

Figure 1 The instrument for retrieving magnetic foreign bodies, with the Teflon tube sleeve and a coin.

Some metallic foreign bodies have magnetic characteristics and can be retrieved if an instrument with a magnet at its tip can be used. This report describes the development of an instrument of this type and the use of the instrument to remove a coin.

Two magnetic disks 1.5 cm in diameter were joined and attached with adhesive to a 5-cm steel spring. A steel wire 200 cm long and 0.75 mm thick was attached with adhesive to the other end of the spring. A Teflon tube (160 cm, 8 Fr) was used as a sleeve for this instrument (Figure 1).

A 12-year-old boy had ingested a one-rupee coin (diameter 2.5 cm) 5 days previously. Abdominal radiography identified the coin in the epigastric area, and it was found to be located in the fundus at gastroscopy. After informed consent had been obtained, the patient underwent removal of the coin using this novel instrument. The sleeve was passed through the suction channel up to the tip of the endoscope. The wire end of the retrieval instrument was then covered with the sleeve from the tip of the endoscope until the magnetic disk reached the tip. The

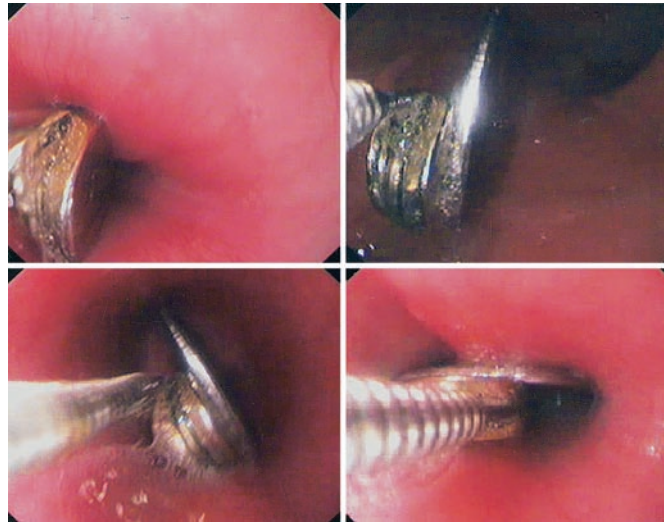


Figure 2 Endoscopic images of the removal of the coin using the magnetic foreign-body retrieval instrument.

whole assembly was then introduced to reach as far as the fundus; the wire was pushed for 5 cm to advance the magnet further into the fundus. The coin attached itself to the magnetic disk (Figure 2). The wire was then pulled in order to bring the magnetic disk, with the coin attached to it, back to the tip of endoscope. The endoscope was withdrawn along with the assembly. It took 3.5 min to complete the procedure.

To the best of our knowledge, this is the first report of endoscope-assisted retrieval of a ferromagnetic foreign body. A few previous case reports [1–3] on the use of magnets to remove foreign bodies, with or without fluoroscopic assistance, have described the procedure as cumbersome and involving a high failure rate. The method of removing blunt ferromagnetic foreign bodies under direct visualization described here is precise, safe, and quick.

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