

Combined forceps and catheter extraction of an oesophageal foreign body

R. AL-SHAHI, M.A., M.B., B.CHIR., M. O'CONNELL, B.SC., M.PHIL., F.R.C.S.(ORL), P. HUCHZERMAYER, F.R.C.S., V. MOORE-GILLON, B.SC., F.R.C.S., F.R.C.S.(ED.)

Abstract

The extraction of impacted foreign bodies from the oesophagus is frequently performed using forceps under endoscopic guidance. We report the case of a 23-year-old prisoner who ingested a lump of cannabis resin which could not be removed from the upper oesophagus with forceps alone. We recommend the use of a Fogarty balloon catheter in conjunction with toothed forceps in such cases.

Key words: Foreign body; Oesophagoscopy

Case report

A 23-year-old male inmate from the local prison was disturbed by prison officers conducting a cell search and swallowed a large lump of cannabis resin in his possession. He began to choke, had severe pain and drooled saliva. He was tender below the thyroid cartilage and normal laryngeal crepitus was absent. Indirect laryngoscopy revealed pooling of saliva around the laryngeal inlet. A lateral soft tissue neck radiograph revealed neither pharyngeal oedema nor any obvious foreign body.

Rigid oesophagoscopy was performed under general anaesthesia with a pharyngoscope. A lump of cannabis resin (Figure 1) wrapped in cling film was seen just below

the cricopharynx at 18 cm from the upper incisors. Its hard consistency and size precluded removal with toothed crocodile forceps alone. A blue Fogarty catheter (IMPRA Arterial Embolectomy Catheter, size 6 French, length 80 cm, balloon 11mm/2 ml) was passed distal to the foreign body (Figure 2) and the balloon inflated after successfully negotiating around the resin with the catheter's rigid introducing wire. Combined extraction of the entire specimen by two operators with forceps and balloon traction was successful.

A check oesophagoscopy excluded oesophageal trauma and underlying disease. A nasogastric tube was passed. Post-operative neck and chest radiographs were normal.



FIG. 1

Ingested cannabis resin, measuring $3.1 \times 2.4 \times 1.2$ cm.

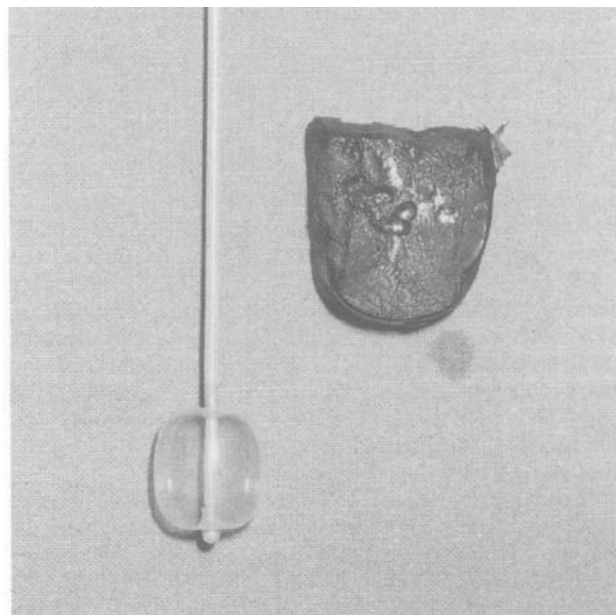


FIG. 2

Cannabis resin and Fogarty balloon catheter.

From the Department of ENT Surgery, St George's Hospital, London, UK.
Accepted for publication: 18 March 1997.

The patient remained afebrile, but was very drowsy for the next 36 hours. He did not demonstrate a resting tachycardia. Urinary cannabinoids were positive 24 hours after admission. He was discharged within 48 hours.

Discussion

The most frequent cause of oesophageal impaction amongst adults is food and amongst children is a foreign body (Blair *et al.*, 1993), although specific high-risk groups of adults such as prisoners and those with psychiatric illness are more likely to ingest foreign bodies (Brady, 1991). The intentional concealment of drugs within the body, an act known as 'body stuffing', is well recognized amongst prisoners (Karp *et al.*, 1991). In one study the drugs detected were heroin (six cases), cocaine (five cases) and cannabis (five cases) (Luburich *et al.*, 1991).

Expedient removal of the drug is recommended to avoid intoxication, obstruction, haemorrhage or oesophageal mucosal perforation.

High success rates have been reported for the endoscopic disimpaction of oesophageal foreign bodies in adults (Berggreen *et al.*, 1993; Blair *et al.*, 1993; Herranz *et al.*, 1991). Berggreen *et al.* (1993) found in a retrospective review that success rates for rigid oesophagoscopy (100 per cent) and flexible endoscopy (96.2 per cent) were not significantly different ($p > 0.05$), although the complication rate was higher for rigid endoscopy. Brady (1991), however, recommends extraction with the flexible endoscope, snares, grasping instruments and overtubes for sharp foreign bodies.

Various methods of balloon extraction have been used for impacted foreign bodies. Foley catheters are particularly suitable for the removal of smooth, proximal foreign bodies in children when oesophagoscopy is not available (Odetoynbo, 1990; Berggreen *et al.*, 1993). Their short length and flexibility often precludes their use in adults, in whom a longer, more rigid catheter may be needed.

The length and tensile strength of Fogarty catheters enables the removal of foreign bodies from many orifices, including the nose (Fox, 1980), bronchi (Kosloske, 1982; Allen and Siefkin, 1987; Monden *et al.*, 1989), urethra (Cumes, 1979) and the rectum of a prisoner (Wigle, 1988). There are two previous reports, both from outside the United Kingdom, of the use of a Fogarty balloon catheter in the removal of oesophageal foreign bodies (Dieter *et al.*, 1972; Zrunek *et al.*, 1986). In a case with a similar presenting complaint to ours (Somjee, 1991), the extraction of a condom containing cannabis was equally unsuccessful using grasping forceps alone. Passage of the foreign body into the stomach occurred during attempted removal and it was then allowed to pass through the alimentary canal. If this technique had been used in our case, mucosal trauma could have been sustained by the sharp edges of the cannabis resin. We recommend the combined use of a Fogarty balloon and toothed forceps for the removal of such obstructing and potentially toxic foreign bodies in the oesophagus.

It is also interesting to note that although cannabis absorption from the oesophagus is said to be minimal, our patient was extremely drowsy for 36 hours post-operatively. The type and quantity of drug, its container, and the hiding place modify its potential toxicity. Urinary cannabinoids in a hashish 'body packer' have been reported as high before (Meatherall and Warren, 1993), as were the levels in our patient. Confounding factors other than

oesophageal absorption could account for this, such as recent cannabis use and ingestion of fragments dislodged at operation.

Acknowledgements

We are grateful to the Department of Medical Photography and Audiovisual Services at St George's Hospital and to the Home Office for granting permission to publish this paper.

References

- Allen, R. P., Siefkin, A. D. (1987) Emergency airway clot removal in acute haemorrhagic respiratory failure. *Critical Care Medicine* **15**: 985–986.
- Berggreen, P. J., Harrison, E., Sanowski, R. A., Ingebo, K., Noland, B., Zierer, S. (1993) Techniques and complications of oesophageal foreign body extraction in children and adults. *Gastrointestinal Endoscopy* **39**: 626–630.
- Blair, S. R., Graeber, G. M., Cruzzavala, J. L., Gustafson, R. A., Hill, R. C., Warden, H. E., Murray, G. F. (1993) Current management of oesophageal impactions. *Chest* **104**: 1205–1209.
- Brady, P. G. (1991) Oesophageal foreign bodies. *Gastroenterology Clinics of North America* **20**: 691–701.
- Cumes, D. M. (1979) Use of Fogarty balloon catheter in removal of smooth foreign bodies from male urethra. *Urology* **13**: 300.
- Dieter, R. J., Norbeck, D. E., Acuna, A., Rogers, J. (1972) Fogarty catheter removal of cervical oesophageal meat bolus. Steak-eater's disease. *Archives of Surgery* **105**: 790–791.
- Fox, J. R. (1980) Fogarty catheter removal of nasal foreign bodies. *Annals of Emergency Medicine* **9**: 37–38.
- Herranz, G. J., Martinez, V. J., Garcia, S. A., Vazquez, B. C. (1991) Oesophageal foreign bodies in adults. *Otolaryngology-Head and Neck Surgery* **105**: 649–654.
- Karp, J. G., Whitman, L., Convit, A. (1991) Intentional ingestion of foreign objects by male prison inmates. *Hospital and Community Psychiatry* **42**: 533–535.
- Kosloske, A. M. (1982) Bronchoscopic extraction of aspirated foreign bodies in children. *American Journal of Diseases of Children* **136**: 924–927.
- Luburich, P., Santamaria, G., Tomas, X., Nogue, S., Pujol, T., Pomes, J., Bordas, J. M. (1991) The gastrointestinal concealment of illegal drugs. *Revista Espanola de Enfermedades Digestivas* **79**: 190–195.
- Meatherall, R. C., Warren, R. J. (1993) High urinary cannabinoids from a hashish body packer. *Journal of Analytical Toxicology* **17**: 439–440.
- Monden, Y., Morimoto, T., Taniki, T., Uyama, T., Kimura, S. (1989) Flexible bronchoscopy for foreign body in airway. *Tokushima Journal of Experimental Medicine* **36**: 35–39.
- Odetoynbo, O. (1990) Foley catheter, a simple device for removal of oesophageal foreign bodies. *Tropical and Geographical Medicine* **42**: 185–187.
- Somjee, S. (1991) A narcotic foreign body in the throat. *Journal of Laryngology and Otology* **105**: 774–775.
- Wigle, R. L. (1988) Emergency department management of retained rectal foreign bodies. *American Journal of Emergency Medicine* **6**: 385–389.
- Zrunek, M., Draxler, V., Hofler, H. (1986) Fogarty catheter for the removal of esophageal foreign bodies. *Laryngo-Rhino-Otologie* **65**: 516–517.

Address for correspondence:
Mrs V. Moore-Gillon,
Department of Otolaryngology,
St George's Hospital,
Blackshaw Road,
Tooting,
London SW17 0QT.