

doing the state's dirty work. But the opposite is true. To conceal policies that dictate rationing is to collude in the state's silence.

Most doctors wish to practise medicine ethically. Ensuring that patients have access to policies that might affect them is an important aspect of ethical practice.

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Sword swallowing uncertainties

Sword swallowing is said to be dangerous. It certainly was in the Middle Ages, when practitioners in Europe were executed as mystics by the Inquisition. Nowadays there may be fewer than 60 practitioners worldwide, but their activity makes up for the small number. Matty "Blade" Henshaw swallowed a total of 3782 swords in 2003, 50 swords were swallowed simultaneously by 19 individuals at a swallowers' convention in 2002, and a belly dancer has swallowed 11 swords at the same time. With all this going on, even if most swords are blunt, medical mishaps may be expected.

Sword swallowing is not an illusion but, unlike in normal swallowing (when the tongue pushes the bolus up against the palate with the neck in a neutral position), the back of the tongue is pushed forwards and the neck hyperextended. Repeated practice enables suppression of the gag reflex. The pharynx is thrust forward and the cricopharyngeus relaxed. The sword may be passed after deep inspiration with the pharynx filled with air—one practitioner describes "sucking in" rather than swallowing the sword. Once past the pharynx, the lubricated sword is swiftly passed, straightening the distensible and elastic oesophagus. Gravity helps, for the performer is always upright.

The sword passes within millimetres of the heart, aorta, and other vitals but, surprisingly, few deaths related to sword swallowing have been described. A Canadian sword swallower did die, but that was after swallowing an umbrella. Another performer fell from the stage with the sword in situ, and was immediately taken for an x ray but remained unscathed. One amateur attempted to swallow a 90 cm blade while under the influence of alcohol and was said to have lacerated his oesophagus and punctured his lung, but the outcome is not known.

None of these cases is recorded in the medical literature, where sword swallowers are mentioned mainly for their help to early endoscopists. For example, a sword swallower helped Dr Kussmaul of Freiberg to develop a rigid endoscope in 1868 using a straight tube, mirrors, and a gasoline lamp. The only report of a complication in the English medical literature describes a Texan who presented with dysphagia and pain five days after his

performance, when an oesophageal perforation was shown on a contrast swallow.¹ Primary repair was unsuccessful, but the patient recovered after oesophagectomy.

Less severe problems such as haematemesis, mucosal laceration or ulceration, and gastro-oesophageal reflux are mentioned on websites but are not recorded in the medical literature. Their incidence is therefore unknown.

It is also uncertain how often the sword enters the stomach. The longest swallowed sword was 82.5 cm and, even though it was swallowed by a 220 cm (7 foot) giant, the sword must have reached the stomach for the cardia is only about 40 cm from the teeth in normal adults. Interestingly, the Sword Swallowers' Association International defines a sword as being at least 37.5 cm long. The gastric lumen is angled forwards and to the left at the gastro-oesophageal junction, and the body of the stomach then bends round to the right, the degree of angulation being related to body habitus—the angulation being greater in thickest individuals. Some swallowers drink water or eat a heavy meal before a performance to give the distended stomach a more vertical orientation, and radiographic evidence suggests the stomach is sometimes entered. I have found radiographs or video recordings of 14 performers on the web, but in only four asthenic individuals does the sword enter the stomach. The only radiograph in the medical literature that is said to show a sword entering the stomach shows the sword passing through the diaphragm, but it may well be just stretching the intra-abdominal oesophagus proximal to the stomach.

Sword swallowing thus raises at least two uncertainties. What is the incidence of complications, and how often do they stomach it?

Brian Witcombe *consultant radiologist, Gloucestershire Royal Hospital, Gloucester (brian.witcombe@gloucr-tr.swest.nhs.uk)*

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