lateral soft tissue neck radiograph but in their diagram of this area the oesophagus is shown as an air containing structure. In fact, the cervical oesophagus is normally deflated and appears as part of the precervical soft tissue shadow extending anteriorly from the vertebral bodies to the posterior border of the constant lucency of the air filled trachea. An occasional hint that there is a lodged radiolucent foreign body is the presence of some trapped air around it in this part of the oesophagus. The problem of distinguishing between laryngeal and foreign body calcification can usually be resolved if lateral radiographs are taken first before and then during a Valsalva manoeuvre. Calcification in the thyroid cartilage will move anteriorly during the manoeuvre, while the position of a radio-opaque embedded foreign body will be unchanged.

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SIR,—In their timely lesson of the week Drs N Kirkham and Ruth English comment that interpretation of the radiographs is hampered by the presence of calcified hyoid and laryngeal cartilages. In a study of the pattern of ossification in the laryngeal cartilages in 516 patients the sites most likely to be confused with a foreign body such as a fishbone were found to be: isolated areas in the posterior lamina and inferior horn of the thyroid cartilage overlying the food passages; the superior tip of the cricoid cartilage, which often ossifies independently; separate vertical ossification of the posterior margin of the cricoid lamina; and, occasionally, the arytenoid and triticeous cartilages.[1] As the present authors point out, first class soft tissue lateral radiographs of the neck are essential.

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1 Hately W, Evison G, Samuel E. The pattern of ossification in the laryngeal cartilages: a radiological study. *Br J Radiol* 1965;38:585-91.

SIR,—The paper by Drs N Kirkham and Ruth English is misleading on several counts. They write that, "the best way of detecting the bone is indirect laryngoscopy, which allows the likely sites in the hypopharynx, larynx, and upper oesophagus to be seen." This is not true: it is not possible to see the upper oesophagus on such an examination.[1] A bone is as likely to lodge in the oropharynx as in the sites mentioned.[2] They point out that, "Above all, the patient must be believed until a full examination by accurately positioned and exposed radiology and indirect laryngoscopy have conclusively excluded the presence of a foreign body." This again is untrue; neither of the above can conclusively exclude the presence of a foreign body. When in doubt a direct examination under general anaesthesia is imperative.[3] Only by such an examination can an experienced endoscopist conclusively exclude the presence of such a body. It would not make sense to attempt to do an indirect laryngoscopy under general anaesthesia, as implied by the authors in their report of the second patient.

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1 Groves J, Clarke SW. Methods of examining the larynx and tracheobronchial tree. In: Ballantyne J, Groves J, eds. *Scott Brown's diseases of ear, nose and throat*. 4th ed. London: Butterworths, 1979:272.
2 Birrell JF. Foreign bodies. In: Maran AGD, Stell PM, eds. *Clinical otolaryngology*. Oxford: Blackwell Scientific Publications, 1979:548.
3 McNab Jones RF. Oesophageal conditions in the practice of ear, nose, and throat surgery. In: Ballantyne J, Groves J, eds. *Scott Brown's diseases of ear, nose and throat*. 4th ed. London: Butterworths, 1979:241.

SIR,—Doctors N Kirkham and Ruth English rightly draw attention to the dangers of the undiagnosed foreign body in the throat, but two points made in their discussion of the topic require clarification. The authors assert that, "The best way of detecting the bone is indirect laryngoscopy, which allows the likely sites in the hypopharynx, larynx, and upper oesophagus to be seen." Indirect laryngoscopy is the examination of the patient's throat with a mirror; by this technique the operator can only see as far down as the larynx and the upper parts of the pyriform fossae. A clue to the presence of a foreign body further down may be gained by a pooling of saliva in the pyriform fossae, but the only way to examine the hypopharynx and upper oesophagus adequately is by direct pharyngoscopy under anaesthesia. The implication of this terminological error is that a negative mirror examination excludes the presence of foreign body lower down; this could mislead the inexperienced with the fatal consequences that the authors warn of.

The second point relates to radiological examination. The two commonest sites for ingested bones to become impacted in the throat are the oropharynx (easily seen by mirror) and just below the pharyngo-oesophageal junction, which is at the level of the sixth cervical vertebra. It is this latter group that is more likely to cause diagnostic difficulty, and the implication, supported by an anatomically inaccurate line diagram, that an *x* ray film that includes only the upper five cervical vertebrae is adequate to exclude a foreign body is therefore erroneous. The whole of the cervical spine should be included on the film, especially as other features, such as increased soft tissue shadowing or air bubbles, may be present in the lower cervical oesophagus when the foreign body itself does not show up clearly on the film.

Fortunately, the number of patients who die or suffer appreciable morbidity from a missed bone in the throat is small. The total number of patients presenting with this complaint, however, is large and, as in many aspects of clinical medicine, it is more difficult to prove that the patient has nothing wrong than it is to make a positive diagnosis. In this case, the key to accurate diagnosis is a good history supplemented by good clinical and radiological examinations and endoscopy in cases of doubt. The authors' clinical point that the patient should be believed is a good one.

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*** Drs Kirkham and English reply below.—ED, *BMJ*.

SIR,—The problem of foreign bodies stuck in the throat is probably familiar to every casualty officer. Our aim in reporting these two fatal cases was to draw attention to the problems of management raised by this relatively common emergency. Mr P J Bradley and Mr A Narula have quoted Chevalier Jackson to great effect to emphasise the possible reasons for missing the diagnosis in a patient with a history and symptoms of a foreign body. In our patients excessive reliance on suboptimal radiographs had contributed to their death. Dr M D M Hadley's point that the air may be present around an otherwise invisible foreign body in the cervical oesophagus would seem to be a useful clue to diagnosis. Dr G Evison has emphasised the problems associated with ossification of laryngeal cartilages, and his study of this subject provides comprehensive data on the patterns of ossification in this region.

Dr S S M Hussain, along with several other otolaryngologists, has made the important point that indirect laryngoscopy alone will not necessarily reveal a foreign body. This procedure is relatively simple as a first line investigation and should be within the competence of a casualty officer. When symptoms persist or there is any doubt then urgent consultation with an ear, nose, and throat surgeon is advisable and direct endoscopy may well be necessary.

Even when all of these procedures have failed to find the object the patient's problems may not have ended. We have recently seen a patient who swallowed a large fish bone which easily passed the oesophagus. It then lodged in a congenital diverticulum of the jejunum, causing perforation and peritonitis. We reviewed the plain abdominal films very carefully but could not identify the bone. We reiterate our original conclusions that the patient must be believed and the foreign body must be looked for and preferably removed.

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Rationing health care

SIR,—In his editorial on Aaron and Schwartz's book *The Painful Prescription*, Professor Rudolf Klein (21 July, p 143) seriously misrepresents an element of the authors' argument. They do not argue that levels of treatment given in the United States are "optimal." Indeed, their whole discussion of the "benefits curve" makes it clear that no particular level of care can be designated optimal. Other information is required to make that judgment.

Levels of care in the United States were used as a proxy for the *maximum* plausible use of any given treatment or technology—that is, for the level at which demand is more or less saturated. As the authors make clear, the system of insurance in the United States has removed price constraints, on the whole, from medical decision making and thus uncoupled the use of technology from cost benefit considerations. In the case of coronary bypass surgery, as Aaron and Schwartz explicitly acknowledge, United States levels probably exceed even medically plausible levels of demand, and they correct for the estimated overshoot.

The distinction between "maximal" and "optimal" is fundamental to their book. It seems to be that only by allowing himself to blur this point was Professor Klein able to adopt such a dismissive attitude toward the central argument.

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