

intubation after induction of general anaesthesia – both contraindicated. He later admitted he had never looked at the anaesthesia record.

At least in the United States, the medical-legal considerations may well influence what technique the anaesthetist recommends or chooses to secure the airway in the cervical injured patient requiring surgery. Although not best medically, the old method of pre-operative awake tracheostomy may be the most realistic and defensible for the anaesthetist. Should the anaesthetist be willing to assume the risk of securing the airway, some form of awake intubation followed by a thorough and documented neurological evaluation and after positioning appears to be the most judicious approach.

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#### REFERENCE

- 1 Tracheal intubation and cervical injury. *Can J Anaesth* 1992; 39: 1000-1.

## Upper airway obstruction by *Ascaris* worm

To the Editor:

A 52-yr-old male patient was admitted to the Intensive Care Unit (ICU) for postoperative ventilation. He had earlier developed severe hypovolaemic shock following lumbar discectomy, for which a laparotomy had been performed to repair an aortic tear. After two hours of mechanical ventilation in ICU, the trachea was extubated and he was fully conscious and in no distress. One half-hour later, the patient suddenly developed severe stridor and became cyanosed. Urgent preparations were made to reintubate the trachea, but the patient coughed up a long object, which was found to be a 22 cm *Ascaris* worm (Figure). Immediately, the stridor disappeared and the patient's colour returned to normal.

Upper airway obstruction is a life-threatening medical emergency. Common causes are foreign bodies or inflammation, but upper airway obstruction of this nature is rarely reported.<sup>1</sup> Adult *Ascaris Lumbricoides* worms may migrate up to the oesophagus and enter the air passages, especially when they are irritated by certain drugs or anaesthetic agents.<sup>2,3</sup> Acute laryngeal obstruction due to *Ascaris* worm, despite its rarity, should be considered, especially in areas of endemic parasitic infestation.

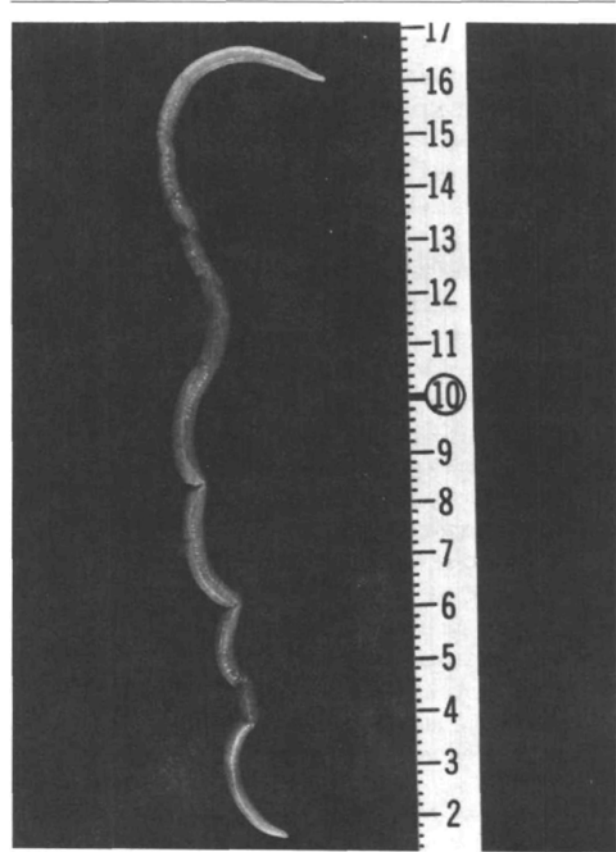


FIGURE *Ascaris* worm removed from the patient.

Treatment of Ascariasis before elective surgery is indicated.<sup>3</sup>

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#### REFERENCES

- 1 Solomon E. Leech – an unusual cause of (laryngo-tracheal) obstruction. *Ethiopian Medical Journal*, 1991; 29: 141.
- 2 Markell EK, Voge M, John DT. *Medical Parasitology*, 7th ed. W.B. Saunders Company, 1992, Chapter 8: 264.
- 3 Schroeder SA, Tierney LM, McPhee SJ, Papadakis MA, Krupp MA. *Current Medical Diagnosis and Treatment*. A Lang Medical Book, 1992, Chapter 29, 1133.

## Pre-admission clinic

To the Editor:

We appreciate your publishing the results of the initiation of our Pre-Admission Anaesthetic Consultation Clinic.<sup>1</sup>

We would like to address some of the issues raised by Dr. Finegan in his accompanying editorial.<sup>2</sup>

The intent of our report was not to discuss the range of our pre-admission anaesthetic activities but rather to describe how we deal with one specific groups of patients – those requiring anaesthetic consultation – in the pre-admission period. At the Toronto Hospital, we have taken an approach to pre-admission anaesthetic assessment very similar to that described by Dr. Finegan. We too have developed a centralized Pre-Admission Clinic (PAC) which operates in conjunction with a Same Day Admission Surgery Unit (SDASU). The Anaesthesia Consultation Clinic which we describe is, as in Dr. Finegan's programme, held daily in tandem with the PAC process. We agree that the Pre-Admission Program should be developed as part of an organized approach to the management of elective hospital admissions. We are fortunate to have the necessary administrative, clinical, technical and clerical support to develop and broaden our programme.

In the pre-admission period we provide both routine preoperative anaesthetic assessments as well as anaesthetic consultations. We chose to review our experience with the pre-admission consultation process because we believe that this may be most applicable to the majority of your readers. Although our experience matches that of the University of Alberta Hospitals with respect to cost savings achieved by the operation of a PAC/SDASU, we believe that not all anaesthetists currently have in place the institutional administrative structure to allow the functioning of such a comprehensive programme. A Pre-Admission Anaesthetic Consultation Clinic requires minimal resources and can be established and administered as an independent programme through the Anaesthetic Department. While we believe that all anaesthetists should work toward the development of a comprehensive multi-disciplinary Pre-Admission Programme, we also believe that the absence of such a programme should not preclude their establishing a Pre-Admission Anaesthetic Consultation Service while continuing to develop the remainder of a comprehensive pre-admission programme.

Our report was a description of our initial experience with the Anaesthesia Consultation Clinic. Dr. Finegan describes the figure of 19% "inappropriate" referrals as "clearly unacceptable." We indicated in our report that the large proportion of inappropriate referrals was due to one surgeon who consistently sent healthy patients for consultation. We indicated the need to educate surgeons to allow them to recognize which patients should be referred. Our impression from our subsequent experience is that our surgeons have, in fact, become "educated" through the consultative dialogue between anaesthetists and surgeons.

We agree with Dr. Finegan that a 5% "operative delay" subsequent to a preoperative consultation is "clearly unacceptable." As we indicated, 16 of the 20 delays in our report were the result of failure to carry out laboratory investigations recommended by the consultant anaesthetist. During the period of this review, we had asked the referring surgeon to arrange the investigations requested by the consultant anaesthetist. We found this to be inefficient and consequently we have changed the functioning of our service so that the consultant anaesthetist, rather than the referring surgeon, is responsible for ensuring that the recommended laboratory investigations are performed, reviewed, and acted upon.

We agree with Dr. Finegan that the creation of pre-admission anaesthetic assessment programmes offers anaesthetists leadership roles in an increasingly important activity. We encourage other anaesthetists to develop an interest and become active in these programmes.

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#### REFERENCES

- 1 Conway JB, Goldberg J, Chung F. Brief review: Preadmission anaesthesia consultation clinic. *Can J Anaesth* 1992; 39: 1051-7.
- 2 Finegan BA. Editorial: Preadmission and outpatient consultation clinics. *Can J Anaesth* 1992; 39: 1009-11.

## *Cost of anaesthesia*

To the Editor:

Rationalizing the costs of anaesthesia has been the subject of much discussion at our institution. We read with interest a recent letter in this Journal containing an equation for calculating the cost of inhalational agent anaesthesia.<sup>1</sup>

That equation gives cost as price for set vapour concentration, fresh gas flow, and time at sea level. However, to allow comparisons between volatile agents of different potencies, cost is better expressed as price per MAC hour.<sup>2</sup>

An equation using fixed constants for known agents<sup>1</sup> cannot be used for new volatile agents. We use a formula derived from the ideal gas-like behaviour of unsaturated vapour,<sup>3</sup> which also takes into account the temperature, atmospheric pressure, and units of measurement.