by the laryngeal mask in the oral cavity may be greater than that occupied by the endotracheal tube, compression of the salivary ducts or acceleration of salivary secretion may occur frequently.

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Aspiration and the CMA (1)

To the Editor:

It is well known that the laryngeal mask is unsuitable for patients who are at high risk of pulmonary aspiration of gastric contents. Nanji and Maltby¹ have drawn our attention to which patients should be regarded as at high risk of aspiration.

Usually a liquid meal passes into the duodenum within two hours and a solid meal within four to six hours, but several factors can influence this. For example, narcotics and anxiety delay gastric emptying and pain is thought to have a similar effect. Zaricznyj *et al.* showed delayed gastric emptying can be produced by injuring the extremities of dogs.² They speculated that the delay of gastric emptying was due to a deterioration in general condition rather than pain itself.

As injured patients are often shocked, anxious, and have been given narcotics, gastric emptying may be delayed. I suggest that many anaesthetists have experienced vomiting of solid gastric contents despite a long period of fasting in injured patients. The patients described in their report vomited solid gastric contents more than six hours after ingestion, and then vomited another copious amount (whether solid or liquid was not stated) after more than 12 hr of fasting, leading to a disastrous outcome.

Although it is difficult to predict the necessary time for gastric emptying in every injured patient, it seems prudent

to regard them all as having full stomachs and to avoid using the laryngeal mask in this population. The laryngeal mask is an excellent device, but we should remember when using it that the margin of safety in preventing pulmonary aspiration is much less than with a cuffed endotracheal tube.

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Aspiration and the CMA (2)

To the Editor:

We were dismayed to read the case report by Nanji and Maltby¹ in which the use of the laryngeal mask airway (LMA) is implicated in a near-fatal case of aspiration pneumonia. It illustrates very well the inappropriate application of this device which will surely result in further similar cases. Despite initial hopes to the contrary, it has been recognised since 1987 that the LMA offers no reliable protection of the airway from gastric soiling.² Indeed two small recent studies suggest the presence of the LMA may decrease the lower oesophageal sphincter pressure and increase the likelihood of regurgitation.²⁻⁴ Irrespective of whether the LMA preferentially "reflects" aspirate into the lungs as has been claimed,⁵⁻⁷ or decreases the volume available for aspiration by reducing the pharyngeal reservoir as Brain maintains,⁸ only careful patient selection can prevent such incidents.

We have recently completed a survey of the literature on the LMA and reviewing the cases available with the benefit of hindsight, the majority of patients who aspirated could have been placed in the "at risk" category and the use of the LMA avoided. In the case reported by Nanji and Maltby there were a number of factors increasing the risk of aspiration: it is generally accepted that trauma producing pain and anxiety, and the administration of opioids preoperatively can delay emptying and hence increase gastric volume;⁹ a past medical history of oesophageal dilatation could potentially compromise the lower oesophageal sphincter; and an anaesthetic technique in-