

## CORRESPONDENCE

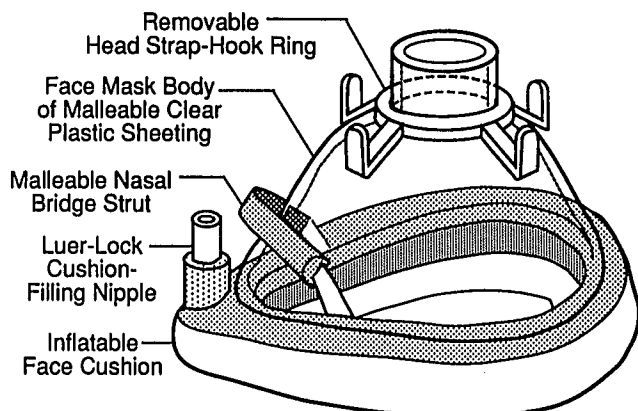


Fig. 2. A new transparent disposable plastic face mask for children and adults.

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## An Unusual Cause of an Erroneous Noninvasive Blood Pressure Reading

*To the Editor:*—The Dinamap monitor uses the oscillometric principles in the measurement of blood pressure (BP). The accuracy of the measurement, however, depends on selection of the proper cuff size. Using a cuff that is too small results in erroneously high BP readings.<sup>1</sup> We would like to report a case in which erroneously low BP readings resulted from the use of a standard arm cuff for a moderately obese individual.

A 72-yr-old woman underwent right neck dissection for metastatic melanoma under general anesthesia. Her past medical history was significant for well controlled hypertension. She was 165 cm tall and weighed 83 kg. Her preoperative BP was 150/90 mmHg. A Dinamap monitor (model 8150, Critikon, Tampa, FL) was used for intraoperative BP measurement. A standard adult cuff was positioned so that the center of its bladder was on the medial side of the patient's right arm over the brachial artery. The cuff did not evenly encircle the arm, which was conical in shape. A large adult cuff was not used because it was found to be too wide for her relatively short arm. The patient's right arm was then securely tucked by her side to facilitate the surgeons' access to the right neck.

The patient remained hemodynamically stable during induction of general anesthesia and through the 1st h of surgery. Unexpectedly, the Dinamap indicated that the patient's BP had decreased to 70/40 mmHg with minimal change in the pulse rate of 70 beats/min. Repeated measurement yielded similar readings with no indication of difficulty in obtaining a signal. The blood loss at that time was minimal, and there was no change in the intensity of the surgical stimulus, nor was the surgical manipulation close to areas of the neck with

rich autonomic innervation. Bolus injections of neosynephrine and ephedrine produced a temporary increase in the systolic blood pressure of only 10–15 mmHg. It was noted, in the meantime, that the patient had a strong left radial artery pulse, the pulse oximeter had a good signal, and the surgical field appeared well perfused. A left radial artery catheter was placed, which showed that the patient's BP was 180/100 mmHg, whereas the Dinamap readings were still low.

The source of the discrepancy became obvious when the Dinamap cuff was inspected. The cuff's velcro had become unfastened and the cuff was hanging open. The cuff's inflatable bladder, however, remained trapped between the patient's body and her arm and, therefore, continued to detect the arterial oscillations.

The upper arm of this patient, being large, short, and conical, was not the ideal site for placement of the BP cuff. It is recommended that, in this situation, another site, such as the forearm or the ankle, be used.<sup>1</sup>

In conclusion, if an imperfectly fitting Dinamap BP cuff becomes loose, it may continue to display erroneously low BP readings instead of displaying a faulty signal alarm if the inflatable bladder remains trapped between the patient's chest and the medial side of a tightly tucked arm. If not recognized, this could lead to unnecessary and potentially harmful intervention.

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## The Laryngeal Mask Airway as an Aid to Intubation in Patients at Risk of Aspiration?

*To the Editor:*—We read with interest the case reports by Asai on the use of the laryngeal mask airway (LMA) for tracheal intubation in patients at increased risk of aspiration of gastric contents.<sup>1</sup> The LMA was used to aid awake intubation (case 1) and to facilitate rapid-sequence induction (case 2). Both techniques offer some theoretical advantages over other methods of achieving intubation in nonfasted patients, but we believe there are limitations and potential hazards that should be taken into consideration.

As Benumof stated in his accompanying editorial, it may not be prudent to use the LMA in a rapid-sequence induction.<sup>2</sup> He argued that the glottis may not remain static after induction if any upper airway reflexes are intact and that the successful passage of the fiberoptic bronchoscope does not guarantee subsequent placement of the endotracheal tube. We would like to add that there is documented evidence that the laryngeal inlet tilts anteriorly by 10–40° in all patients with the LMA *in situ* following the application of cricoid pressure and is likely to make the passage of an endotracheal tube more difficult by making the angle of approach less favorable.<sup>3</sup> An apparently easy fiberoptic intubation suddenly might become difficult after the application of cricoid pressure. We suggest assessing the effect of cricoid pressure under direct vision before induction if this technique is thought justified but believe that the safer option is to attain intubation before induction, as in case 1.

A further concern is that the benefit of preoxygenation may be reduced when the LMA is used to facilitate rapid-sequence induction. It is difficult to maintain an air-tight seal during insertion of the fiberoptic bronchoscope and endotracheal tube down the LMA, and there will be air entrainment.

Asai states that aspiration may occur in sedated patients but that stimulation with the LMA is minimal, and he reported no cases of vomiting in 25 patients. However, a study assessing the use of the LMA for awake diagnostic fiberoptic bronchoscopy in fasted patients using topical anesthesia and sedation reported several associated problems such as gagging (16%), coughing (12%), recurrent swallowing (18%), and excessive salivation (6%), indicating that the LMA can be quite stimulating.<sup>4</sup> Vomiting with the LMA *in situ* is

particularly dangerous if the tube of the LMA is occluded with the fiberoptic bronchoscope and endotracheal tube. In these circumstances, gastric contents might be reflected into the trachea, especially if the protective reflexes are obtunded by sedation, local anesthesia, and the patient's clinical state.

In conclusion, we believe that both techniques described by Asai are potentially hazardous and cannot be advocated for routine use in the light of current evidence. We believe that this is a particular area of LMA use that requires large comparative studies to fully evaluate the risks involved.

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