

CORRESPONDENCE

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In Reply:—We read with interest the letter from Drs. Goudas and Carr. We agree that their proposed graphic analysis may improve the presentation of results in some studies involving analgesic drugs. However, in the case of our work, it would be extremely difficult to present the results from eight different experimental groups in the fashion suggested. In addition, Drs. Goudas and Carr should detail specifically what kind of synergistic or additive interactions between drugs that this kind of presentation would provide. Typically synergistic or additive interactions are evaluated using a formal isogolographic analysis, an analysis that we do not believe was feasible in our study.

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Pulse Oximetry Probe Adhesive Disks: A Potential for Infant Aspiration

To the Editor:—The risk of ingestion and foreign body aspiration in infants and young children is well known.^{1,2} Neonates and infants may be particularly prone to aspiration because of immature swallowing mechanisms involving cricopharyngeal dysfunction and absence of laryngeal elevation.³ Objects as seemingly innocuous as toy balloons and tissue paper have led to infant death from asphyxiation.^{4,5} We report an accidental ingestion of a pulse oximetry probe adhesive disk cover by an infant scheduled for elective surgery.

A 10-month-old, 8-kg boy underwent routine inhalation induction of anesthesia for bilateral inguinal hernia repair. On initial laryngoscopy for tracheal tube placement, a 1-cm diameter paper disk was noted over the epiglottis, and a Magill forceps was used in an unsuccessful attempt to recover it. After continuing mask ventilation for a second retrieval attempt, the disk was no longer visible. We then elected to intubate the trachea, and in the absence of abnormal auscultatory lung findings, decreased lung compliance, or decreased arterial hemoglobin oxygen saturation (Sp_{O_2}) suggestive of foreign body aspiration, we continued the planned procedure. On examining the oral airway used during inhalation induction, we found the 1-cm paper disk adhered to its side. We determined that the disk was the protective covering of one of six "adhesive dots" packaged with the Nellcor Oxisensor II I-20 and N-25 (fig. 1). Because we could not locate the rest of the packaged dots and, in particular, because we could not account for the blue-tipped plastic adhesive dot attached to the retrieved paper disk, we conducted direct and indirect laryngoscopy and nasopharyngoscopy before extubation. Although minor alveolar ridge bleeding resulted from this inspection, no other foreign body was found, and the infant was extubated and recovered in the postanesthesia care unit without further incident.

At the Children's Hospital of Philadelphia, our day surgery nursing staff routinely measures patient vital signs and Sp_{O_2} on the child's arrival to the hospital preoperative registration area approximately 1 h before surgery. After Sp_{O_2} measurement, the pulse oximetry probe is removed from the finger or toe and kept with the medical record. The Nellcor probes we use have an attached set of six paper-covered adhesive dots that are intended for probe reapplication after ≥ 8 h of use. To prevent inadvertent discard of these dots with the probe packaging, a smooth paper backing is attached to the probe cord itself.

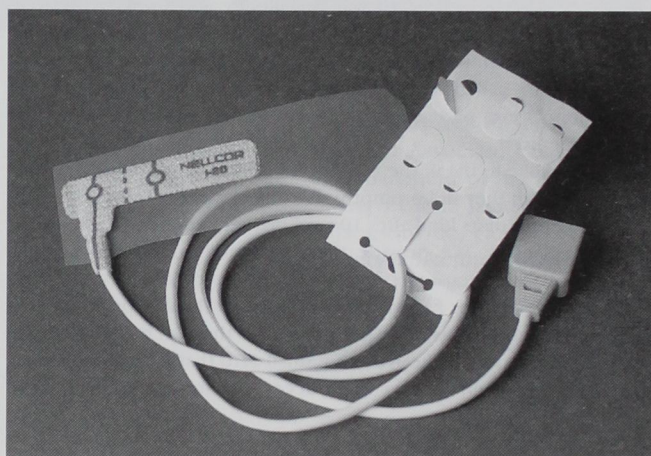


Fig. 1. The Nellcor Oxisensor II I-20 probe with its attached set of six paper-covered adhesive dots. Note the 1-cm paper disk cover folded back to partially expose the upper left blue-tipped plastic adhesive dot.

Because it is our personal practice in the operating room to immediately remove and discard the dots and paper backing into a waste container before reapplying the pulse oximetry probe, we strongly suspect this infant had ingested the paper cover during the initial assessment in the preoperative registration area. It is conceivable, however, that a plastic dot adhered to one of our gloves without our notice and that we unintentionally introduced the paper cover during mask ventilation or oral airway insertion. In general, adhesive dots and covers could be transferred to a patient's airway by a tongue depressor, oral airway, laryngoscope, or tracheal tube if any of these items were to have come in contact with the pulse oximetry probe and set of adhesive disks at the anesthesia work station.

Since this incident, our staff routinely removes the set of adhesive dots from the probe before measuring preoperative Sp_{O_2} . Although there were no manufacturing or packaging defects in this case, the incident was reported to Nellcor Puritan Bennett, Inc. (Pleasanton, CA). We recom-