

Oxygen reserve index (ORi™) contributes to prediction of hypoxemia and patient safety during tracheal stent insertion using rigid bronchoscopy: a case report.

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The oxygen reserve index (ORi™) is a new noninvasive and continuous variable, which represents a moderate hyperoxygenation status, with a unitless scale between 0.00 and 1.00. When percutaneous oxygen saturation (SpO₂) exceeds 100%, arterial blood oxygen partial pressure cannot be evaluated without performing arterial blood gas analysis. Because of significant air leakage during rigid bronchoscopy, it is difficult to monitor respiration using capnography, which does not measure end-tidal carbon dioxide (ETCO₂) accurately. A 66-year-old man (175 cm, 76.8 kg) with a chief complaint of difficulty in breathing was diagnosed with a thyroid tumor. Computed tomography revealed tracheal stenosis due to direct invasion of the thyroid tumor; therefore, tracheal stenting was planned immediately. After supplying 6 L/min oxygen with a face mask and administering 180 mg of propofol intravenously, the supraglottic airway was intubated. General anesthesia (total intravenous anesthesia) through continuous administration of 6-10 mg/kg/h of propofol and intermittent administration of 50 µg of fentanyl (total 200 µg) preserved spontaneous breathing. During tracheal stent insertion, disconnection between the oxygen supply system and rigid bronchoscopy, and tracheal stent expansion, the ORi tended to decrease before SpO₂ decreased. Thus, measuring ORi could prevent hypoxemia during tracheal stent insertion using rigi