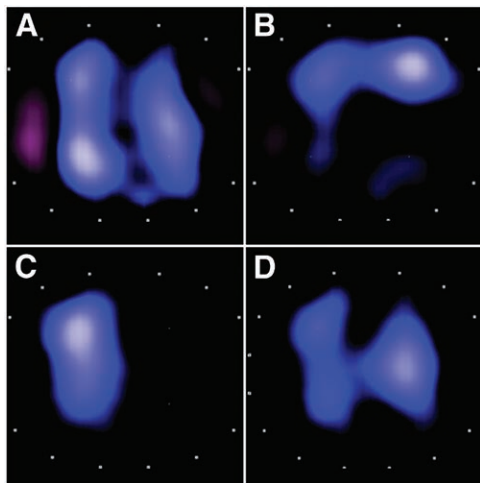
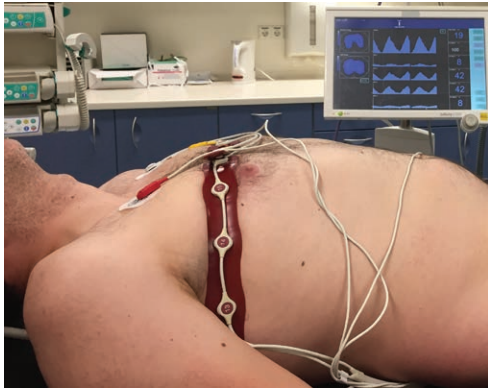


# Electrical Impedance Tomography for Confirmation of Lung Isolation during One-lung Ventilation

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ONE-LUNG ventilation is regularly performed to facilitate thoracic surgical procedures during general anesthesia. The adequacy of one-lung ventilation following placement of a double-lumen endotracheal tube was verified by auscultation and intermittent fiberoptic bronchoscopy. In addition, we continuously monitored one-lung ventilation by electrical impedance tomography,<sup>1</sup> which is a noninvasive, radiation-free bedside method that continuously displays regional distribution of ventilation and may help to optimize ventilation during general anesthesia.<sup>2</sup> Electrical impedance tomography measurements require a belt with electrodes around the patient's chest (top image). In brief, axial images are reconstructed from impedance changes induced by very small alternating electrical currents, that are applied through pairs of electrodes.

Images *A–D* show thoracic electrical impedance tomography images. The *blue shapes* show summarized tidal changes due to ventilation and the *dots* are a schematic representation of the electrodes surrounding the thorax.

Image *A* shows electrical impedance tomography during deep spontaneous breathing with ventilation throughout both lungs. Image *B* illustrates the ventral shift of ventilation in both lungs with collapse of dependent lung areas, during manual ventilation after induction of anesthesia.<sup>3</sup> Image *C* confirms correct lung separation by lack of ventilation signals of the left lung. Finally, image *D* shows ventilation of both lungs following resumption of spontaneous breathing after discontinuing anesthesia. Electrical impedance tomography may be a helpful monitoring tool during one-lung ventilation.

## Competing Interests

Dr. Wrigge received consultancy fees from Dräger Medical, Lübeck, Germany; funding and lecture fees from InfectoPharm, Heppenheim, Germany; and lecture fees from MSD, Konstanz, Germany. The other authors declare no competing interests.

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