

Diffuse Subcutaneous Emphysema after Transperitoneal Laparoscopic Donor Nephrectomy.

Dear Editor,

During laparoscopy, CO₂ insufflation can result in gaseous deposition in subcutaneous and deeper fascial layers. The pharyngeal tissues could potentially become grossly emphysematous, thus posing a threat to the airway patency post-extubation.

In our institution, an otherwise fit 63-year-old woman underwent transperitoneal hand-assisted laparoscopic donor nephrectomy. During the 2 hours of pneumoperitoneum her cardiovascular parameters and end-tidal CO₂ remained normal. The intra-abdominal pressure was in the range of 12 mmHg. Intraoperatively, she was noted to have developed marked cervical emphysema expanding cephalad and to the trunk and limbs. Her arterial blood gas analysis remained normal. A portable chest radiograph showed extensive subcutaneous emphysema of neck and chest wall.

Post-nephrectomy she remained intubated until a leak sound could be heard after deflation of the tube cuff and her vocal cords could be visualized by means of laryngoscopy. No further action was rendered necessary and the gaseous collection was allowed to be spontaneously absorbed and exhaled. On next day her subcutaneous emphysema had completely resolved. The patient had no obvious diaphragmatic defect.

Diffuse subcutaneous emphysema is an extremely rare complication; Baron et al showed zero incidence in 200 cases¹; Halgrimson observed it once over 2562 cases².

This data suggest that it is either an under-reported complication or it seldom happens.

There is no significant difference in carbon dioxide elimination in patients who underwent transperitoneal laparoscopy compared to retroperitoneoscopy³. A non-randomized prospective study comparing retroperitoneal versus transperitoneal approaches concluded that subcutaneous emphysema was strongly and independently associated with a greater degree of CO₂ absorption during laparoscopic surgery and it did not depend on the surgical approach⁴.

When cervicofacial emphysema occurs during laparoscopic procedures, laryngoscopy should be performed before tracheal extubation in order to avoid potential airway obstruction from potential associated pharyngeal emphysema⁵. Once a pharyngeal swelling has been excluded, the subcutaneous CO₂ emphysema may be let resolved spontaneously.

References

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Conflict of interest

The authors declare no conflict of interest.

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