

Picture Prognosis

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A 74-year-old woman undergoing oral surgery under general anesthesia develops sudden right-sided neck swelling and crepitus during nasotracheal intubation. Multiple NTI attempts were made with resistance. Postoperative CT shows extensive cervical subcutaneous emphysema with pneumomediastinum. Hemodynamics remain stable. What is the most likely cause?

1. Nasopharyngeal wall injury during NTI
2. Tracheal rupture
3. Esophageal perforation
4. Spontaneous pneumomediastinum

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Answer: Nasopharyngeal wall injury during NTI

Repeated NTI attempts with resistance can injure the fragile posterior nasopharyngeal wall, especially in elderly patients. Positive-pressure ventilation allows air to track from the retropharyngeal space into cervical tissues and the mediastinum, causing subcutaneous emphysema and pneumomediastinum. Esophageal perforation typically presents with severe chest pain, mediastinitis, and systemic toxicity; imaging often shows contrast leak, which was absent here. Tracheal rupture usually causes massive air leak, respiratory instability, and difficulty ventilating; bronchoscopy often confirms the diagnosis. Spontaneous pneumomediastinum is more common in younger patients and typically associated with asthma, Valsalva maneuvers, or coughing not airway instrumentation.