Y-style silicone stent for treatment of trachea massive hemoptysis supported by extracorporeal membrane oxygenation

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To the Editor: A 70-year-old woman was admitted to the respiratory intensive care unit with severe chest tightness. She had confirmed lung adenosquamous carcinoma 7 months ago. As the epidermal growth factor receptor gene mutations and anaplastic lymphoma kinase fusion gene were negative, she was administered gefitinib for 3 months and then programmed death-1 drugs were treated for two courses. Nearly 1-month of facial ministry edema, computed tomography scan showed that the superior vena cava syndrome appeared. Gamma knife radiosurgery was given 10 times.

The patient was given endotracheal intubation due to severe chest tightness and difficulty breathing 10 days ago (on November 20, 2018). Blood oxygen was still unable to be maintained through ventilation, and then extracorporeal membrane oxygenation (ECMO) support was given. Chest digital radiography indicated atelectasis [Figure 1A]. Next, she was given a bronchoscope examination. During the endotracheal intubation, a lot of necrosis tissue and blood clots could be found, and thrombotic tissues obstructed the whole airway. Then we used saline flushing and cryobiopsy repeatedly to take out huge blood clots, an intact cast of the bronchial tree, including right lobe, two segmental branches of the upper lobe, and five segmental branches of the lower lobe [Figure 1B]. Then the bronchoscopy found left main bronchial lumen unobstructed, mucosal edema, right in the middle of stem bronchial lumen unobstructed, upper lobe primary tumor site not exposed.

The commonly used methods to control massive hemoptysis are iced saline, agents, laser, argon plasma coagulation, bronchial artery embolization, and surgery.[1] Y-style silicone also had been used to stop massive hemoptysis by Ryu *et al*.[2] Since the patient had massive bleeding in the right-side wall of the lower trachea, conventional treatment was ineffective, and the patient had a collapsed trachea at the same time, Y-style silicone stent was placed through rigid bronchoscopy to compress hemostasis [Figure 1C]. After about 24 h there was no bleeding found, and chest digital radiography suggested partial revascularization [Figure 1D]. Despite the placement of silicone stents could stop the bleeding of tracheal and open the airway, the patient had diffuse alveolar hemorrhage, and oxygenation could not be maintained without ECMO. The patient died of complications from ECMO 5 days later.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient's guardians have given their consent for her images and other clinical information to be reported in the journal. The patient's guardians understand that her names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

None.

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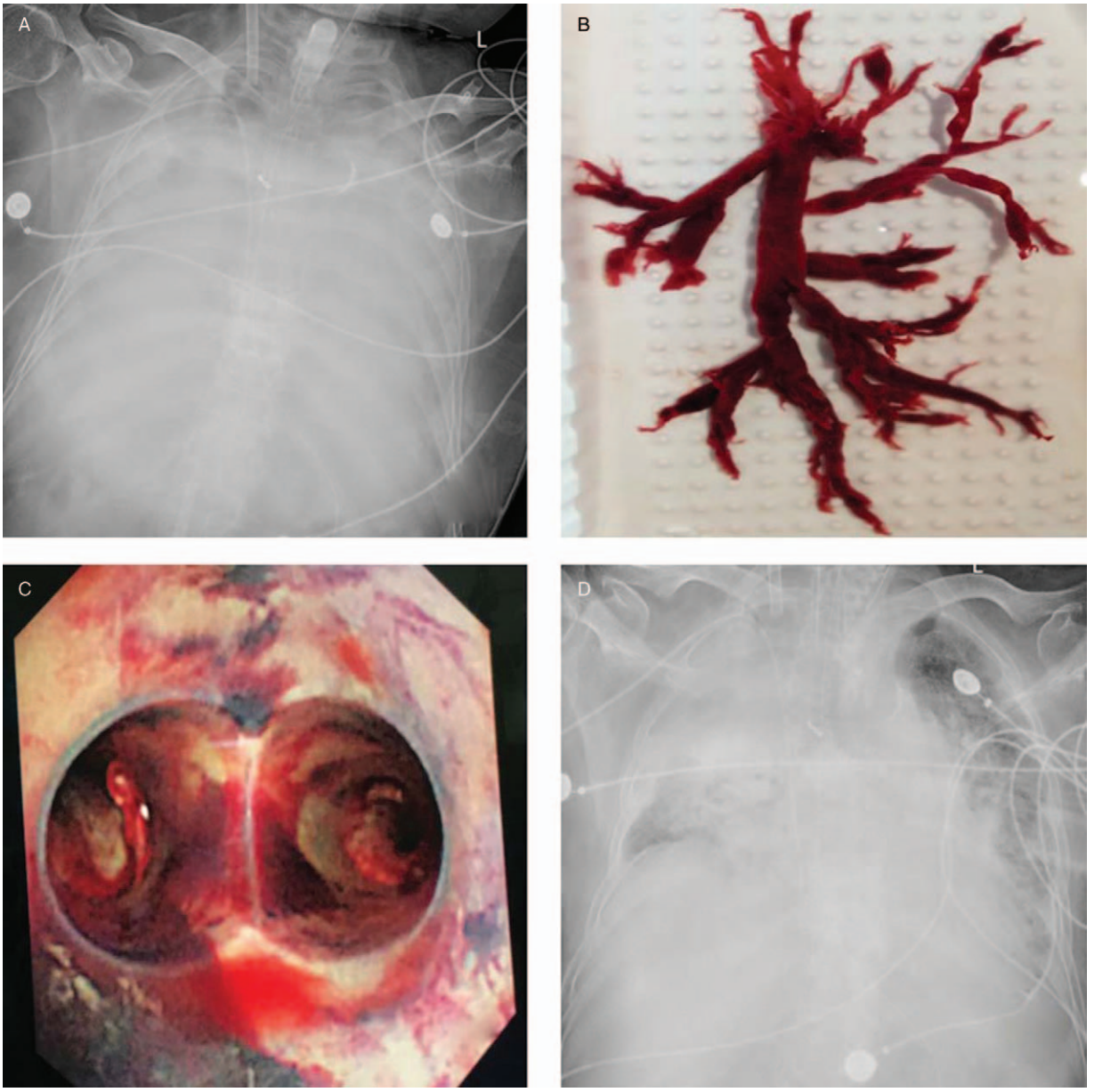

Figure 1: A 70-year-old woman receiving Y-style silicone stent for treatment of trachea massive hemoptysis supported by extracorporeal membrane oxygenation. (A) Chest digital radiography indicated atelectasis. (B) A huge blood clots in the form of an intact cast of the bronchial tree. (C) Y-style silicone stent was placed through rigid bronchoscopy to compress hemostasis. (D) Chest digital radiography showed partial reexpansion.

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