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Tracheal granuloma 7 years after extubation

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Keywords
Endoscopic polypectomy, tracheal granuloma, tracheal stenosis.

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Key message

Tracheal granuloma can cause severe stenosis long after extubation. When a patient with a history of endobronchial intubation has an intratracheal tumour, we should consider the possibility of this condition.

Clinical Image

Tracheal granuloma is a rare complication of endotracheal intubation. However, fatal tracheal stenosis can occur if the diagnosis is delayed. In this study, we report a case of severe tracheal stenosis caused by granuloma 7 years after extubation.

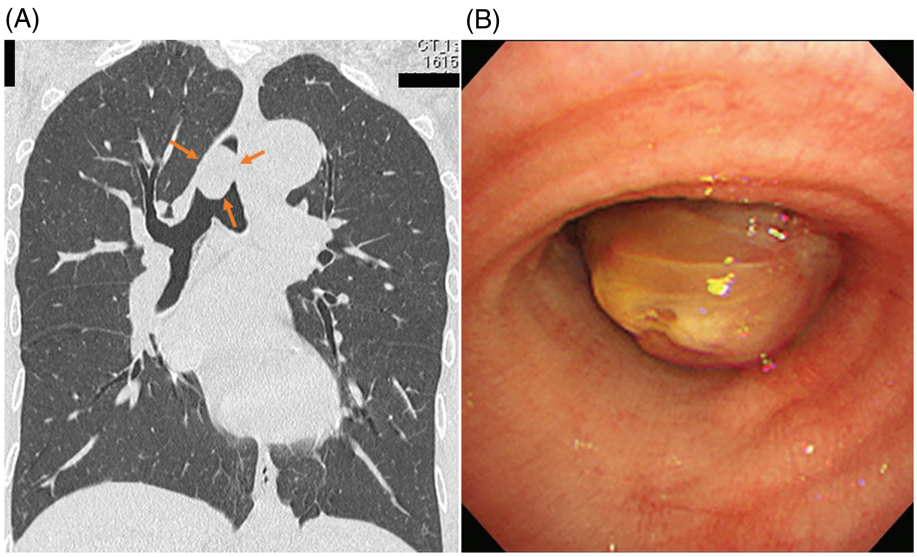

Figure 1. Computed tomography scans of the chest showing the intratracheal mass (A). Bronchoscopic images showing that the trachea is severely obstructed by a pedunculated tumour originating from the anterior wall of the lower trachea (B).

A 58-year-old woman presented with cough, wheezing, dyspnoea, and bloodstained sputum. Seven years earlier, she had undergone total aortic arch graft replacement for the treatment of thoracic aortic dissection, with a 72-h intubation time and post-operative intensive care. She had no history of burns or injury of the respiratory tract. Computed tomography scans of the chest showed an intratracheal mass (Fig. 1A). Bronchoscopy showed that the trachea was severely obstructed by a pedunculated tumour originating from the anterior wall of the lower trachea (Fig. 1B). Endoscopic polypectomy was performed to resect this lesion using a high-frequency electrosurgical snare via flexible bronchoscopy. Her symptoms rapidly resolved after polypectomy; there were no complications related to the polypectomy. The pathological examination of the specimen showed inflammatory granulation with proliferation of blood vessels and infiltration of inflammatory cells (Fig. 2). There was no evidence of malignancy. She was diagnosed as having inflammatory granuloma induced by the mechanical stimulus of prolonged intubation 7 years ago. We performed bronchoscopic follow-up after 1, 2, 3, 5, and 11 months. Bronchoscopic findings after 5 months showed cicatrization at the excision site of the anterior wall of the trachea. We recently performed follow-up with chest X-ray and computed tomography scan; she has been asymptomatic and has remained free of relapse for 24 months.

In conclusion, tracheal granuloma commonly occurs on the anterior wall of the subglottis [1]. It can be caused by some tracheal stimulation, and the main aetiological factor is complication by endotracheal intubation or tracheotomy. Airway mucosal damage due to traumatic intubation, unnecessarily high cuff pressure, an unsuitable tube size, or a long incubation duration can be aetiological factors [2,3]. The onset of symptoms of tracheal stenosis varies from the moment of extubation to 13 years later [1,4]. The onset may also be very insidious, with stenosis being almost complete before symptoms become severe; alternatively, symptoms may develop rapidly and cause an acute emergency [1]. Operative correction, endoscopic excision, dilatations, tracheostomy, stenting, or steroid regimens can be a treatment option for tracheal granuloma [1]. In our patient, tracheal granuloma caused severe stenosis despite the lapse of 7 years after extubation. A long duration (72 h) of intubation most likely induced the granuloma, because other aetiological factors were absent. We performed endoscopic polypectomy, and our patient has had a benign clinical course thereafter.

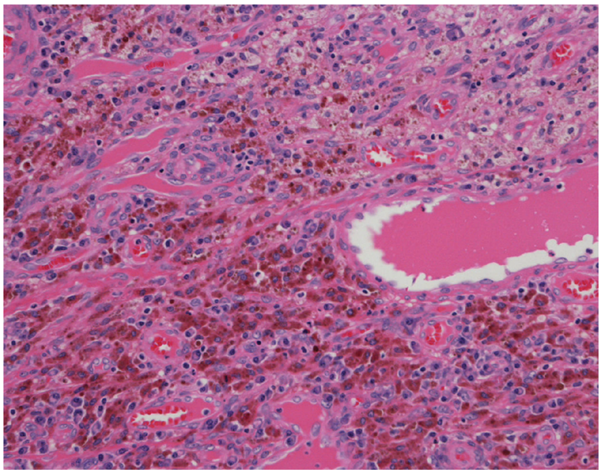

Figure 2. Pathological image of the specimen stained with haematoxylin and eosin, showing inflammatory granulation with proliferation of blood vessels and infiltration of inflammatory cells (200×).

Disclosure Statements

No conflict of interest declared.
Appropriate written informed consent was obtained for publication of this case report and accompanying images.

References

1. Harley HR. 1971. Laryngotracheal obstruction complicating tracheostomy and endotracheal intubation: a critical review. Thorax 26:493–533.
2. Barton RT. 1953. Observation on the pathogenesis of laryngeal granuloma due to endotracheal anesthesia. N. Engl. J. Med. 248:1097–1099.
3. Harrison GA, and Tonkin JP. 1968. Prolonged (therapeutic) endotracheal intubation. Br. J. Anaesth. 40:241–249.
4. Ogawa M, Hosokawa K, Yamamoto Y, et al. 2014. A clinical investigation of post-intubation/tracheotomy laryngotracheal stenosis in adults. J. Jpn. Broncho-Esophagol. Soc. 65: 305–313.