

Successful Diagnosis of Tracheobronchopathia Osteochondroplastica using Cryobiopsy: A Case Report

고려대학교 안산병원 내과¹, 고려대학교 안산병원 호흡기내과², 고려대학교 안산병원 중환자학과³, 고려대학교 안산병원 병리과⁴

김준태¹, 이지희², 정승준², 김수아³, 김유진², 이승현², 김제형^{2,3}, 이주한⁴, *김병기²

Introduction: Tracheobronchopathia osteochondroplastica (TPO) is a rare benign disease characterized by the formation of extensive cartilaginous and bony nodules protruding in the trachea and bronchus. Here, we present a case report where TPO was successfully diagnosed using cryobiopsy in a patient who incidentally revealed abnormal findings during a routine health screening test.

Case Report: A 53-year-old female with no previous medical history admitted to our hospital due to abnormal findings in an outside computed tomography (CT) scan during a routine health promotion examination. At the time of hospital visit, her vital signs were stable, and her laboratory test results showed no abnormalities. The CT scan revealed multifocal diffuse irregular thickening and nodularity of the tracheal cartilage, along with several ossified or calcified nodules (Fig. 1A). Subsequent bronchoscopy showed multiple nodules of varying sizes protruding like cartilage (Fig. 1B). And then, endobronchial biopsy was performed using a 1.1mm thin cryoprobe. The pathological report indicated multiple calcified nodules accompanied by mucosal inflammation, consistent with findings suggestive of TPO (Fig. 1C, 1D).

Discussion: TPO is an exceedingly rare benign condition characterized by the formation of multiple submucosal nodules composed of bone and cartilage beneath the tracheal mucosa. The pathophysiology of TPO is believed to be associated with the transforming growth factor-beta/bone morphogenic protein-2 pathway, although it remains unclear. While most cases are asymptomatic, some patients may experience symptoms such as cough and dyspnea. There is no specific treatment for TPO, and management mainly focuses on symptomatic relief. However, the prognosis is generally favorable. Cryobiopsy via bronchoscopy has become increasingly utilized in clinical practice for diagnosing various conditions due to its ability to provide larger tissue samples compared to conventional forceps biopsy. This case emphasizes the potential utility of cryobiopsy in diagnosing rare conditions like TPO.

