

## 論 文 要 旨

### Altered lymphatic structure and function in pleural anthracosis: Negative role in skip N2 metastasis

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**Objectives:** The present study investigated whether or not pleural anthracosis is associated with changes in the pleural lymphatic structures or function, which would interfere with nodal skip metastasis.

**Methods:** This study comprised 2 different case series. In the first series, we observed pleural lymphatic drainage using near-infrared fluorescent endoscopy by the subpleural injection of indocyanine green immediately after thoracotomy for lung cancer. We also performed a histological assessment of the pleura. In the second series, we reviewed the nodal metastatic pattern (skip or non-skip metastasis) in pathological N2 lung cancer involving the pleura. These findings were compared with the severity of pleural anthracosis, which was quantified by thoracoscopic vision and a software-based imaging analysis.

**Results:** In the first series (n = 42), pleural lymphatic drainage was not visualized in 19 (45%) patients who had relatively severe anthracosis, while it was visualized in the remaining 23 (55%) patients who had relatively minimal anthracosis. Histologically, severe anthracosis was associated with pleural thickening accompanied by a decreased incidence of straight-running lymphatic vessels and, in turn, an increased incidence of short lymphatic vessels, which was suggested to be the result of pleural remodelling. In the second series (n = 53), a skip metastatic pattern was found in 24 (45%) patients who predominantly had less-severe anthracosis, while a non-skip metastatic pattern was found in 29 (55%) patients who predominantly had severe anthracosis.

**Conclusions:** Pleural anthracosis was associated with pathological changes in the pleural lymphatics and decreased pleural lymphatic drainage, thereby interfering with nodal skip metastasis.