

# **Measurement of Inaugurated Blood Flow of the Bronchial Artery in Takayasu's Arteritis Using Nuclear Angiographic Technique**

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Several methods have been reported for the detection of the bronchial arterial blood flow, however, these methods were needed to employ the invasive procedure.

The purpose of the present study is to investigate the possibility of the non-invasive method for the detection of the bronchial arterial flow in such pulmonary region as of Takayasu's arteritis which frequently accompany decreased perfusion of pulmonary artery.

Nuclear angiographs were performed in 10 patients with Takayasu's arteritis, 4 cases with pulmonary carcinoma and 3 cases with chronic obstructive pulmonary disease after the bolus injection of 10 mCi of  $^{99m}\text{Tc}$ -albumin into the basilic vein. The radioactivities were continuously monitored after the injection over the lung and heart regions by r-camera and were stored on the magnetic tape at 0.5 sec of time interval for further computer analyses.

In three patients with Takayasu's arteritis who

had tsegmental perfusion defect of pulmonary artery, the time activity curves of this region showed the delayed peak 4 or 5 seconds later from the peak of pulmonary arterial curve which is seen in the intakt other pulmonary region of the same indivisual. The presence of the delayed abnormal peak was considered to be dur to the increased blood flow of the bronchial artery in this region which is not perfused by pulmonary artery. As an index to express the degree of bronchial arterial flow, the ratio of the count in the area with increased bronchial arterial flow to the count of the area with same size perfused predominantly by the pulmonary arterial flow was calculated.

As the results, the degree of increased bronchial arterial flow in three cases with Takayasu's disease were 9, 16 and 29% respectively.

On the other hand, increased blood flow of bronchial artery could not be detected in cases with pulmonary carcinoma or chronic obstructive pulmonary disease.