Observation on Pulmonary Artery Blood Flow of Lungs Treated by Artificial Pneumothorax After the Elapse of Many Years

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This study was carried out on forty JNR employers who underwent artificial pneumothorax treatment for tuberculosis during 1948 to 1955 and are now working at JNR workshops. One of them, however, who took a thoracoplasty was excluded. Thus thirty-nine workers, two females and thirty-seven males, ranging in ages from 37 to 53 were the subject of this study.

In some cases, the lungs were perfusion scanned and the scintigram reading and intermittent integrator were employed to observe the pulmonary artery blood flow distribution. In addition, for some cases, $^{99m}$Tc pertechnetate was injected and a scintillation camera used to observe the dynamics of the pulmonary blood flow.

When the pleural thickness detected by a Roentgen examination and the reading of the healed focus are compared with the results of a Karyological examination, though the Roentgenogram may show a healed focus, a large abnormality is observable in the pulmonary artery blood flow not only locally but also widely. Besides the effect of the local focus existing in the pulmonary substance, impediment in the pulmonary artery blood flow caused by pleurisy of the lungs and abnormality of the lung structure is quite extensive. Even in the case where X-ray fails to reveal a focus, abnormality of the pulmonary blood flow was observable in most of the cases. In fact there were only two exceptions in all the cases handled. Especially, the side of the lung where artificial pneumothorax was performed showed a conspicuous decrease in the blood flow, and the reading for the left side is higher than that of the right side.

The abnormality in the pulmonary artery blood flow appears first in the upper and lower parts of the lung. In case of large abnormality, the abnormality in the central portion of the lung is great.

The scintigram reading were classified and a report presented on the aspects of pulmonary artery blood flow, the focuses from X-ray readings, the extent of abnormality readings and the dynamics of the pulmonary artery blood flow circulation, etc.

In spite of the fact that many years have elapsed since the patients underwent artificial pneumothorax (seldom performed today) and the focuses have almost completely healed, a Karyological examination revealed that the abnormality in the pulmonary artery blood flow was both intense and wide-spread.

The result of the observation are highly interesting, however, the significance of the criticism leveled against artificial pneumothorax should also be taken into consideration.