

# MEDIASTINAL LYMPHOSCINTIGRAPHY

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We made an attempt of mediastinal lymphoscinti-  
graphy, which we could put in practice as a routine  
procedure.  $^{198}\text{Au}$  colloid of  $30\text{--}50\mu\text{Ci}$  ( $0.3 - 0.5\text{ml}$ )  
was injected into mucosa or submucosa of  $B_8$  or  $B_9$   
of both lungs by endoscopic method. And scans were  
made 3, 6, 12, 24, 48 and 72 hours after the in-  
jection. In clinical application in 11 cases,  
following results were obtained; In cases without  
apparent metastatic invasion in mediastinal lymph-  
node, one R.I. accumulation in the subcarinal lymph-  
node and one or more R.I. accumulation in right  
mediastinal lymphnode were clearly visualized.  
R.I. accumulation in right mediastinal lymphnode was  
not found in cases with right mediastinal lymphnode  
metastasis. In cases with extensive subcarinal  
lymphnode invasion, R.I. accumulation was visualized  
neither in subcarinal lymphnode nor in right media-  
stinal lymphnode.

# STUDIES OF LYMPHOCYTE LABELING WITH $^{99\text{m}}\text{Tc}$

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Lymphocytes were labeled with  $\text{Tc-}^{99\text{m}}$  by using CIS  
kit for  $\text{Tc-}^{99\text{m}}$  labeled red cells. Labeling yield was  
 $5.3 \pm 0.4\%$  (mean  $\pm$  SD,  $n = 8$ ). Viability was  
evaluated by supravital staining with trypan blue  
and its value was  $92.1 \pm 2.3\%$  ( $n = 5$ ). Repeated  
washes of labeled lymphocytes were performed in order  
to measure elution rate of the labeled cells. Free  
 $\text{Tc-}^{99\text{m}}$  was completely removed by washing of three  
times and loss of radioactivity in the cells by  
further washing was not significantly recognized.

In the mice, disappearance curve of  $\text{Tc-}^{99\text{m}}$  labeled  
lymphocytes from blood stream showed two exponential  
components.  $T_{1/2}$  of the first component was 0.5 hr  
and  $T_{1/2}$  of the second one 6.1 hrs respectively.  
Immediately after infusion of labeled cells, high  
radioactivity was detected in the lungs and its radio  
activity was decreased rapidly in the course of  
time. The radioactivity of spleen and liver increased  
until 1 hr after the infusion and achieved plateau.

In the human subject, scintiphotogram after the  
infusion of  $\text{Tc-}^{99\text{m}}$  labeled lymphocytes showed the  
accumulation of  $\text{Tc-}^{99\text{m}}$  radioactivity in the spleen  
and liver. It is concluded that the technique for  
labeling lymphocytes in vitro with  $\text{Tc-}^{99\text{m}}$  yields  
valuable information about the lymphocyte kinetics.