

# Diagnosis of Hepatic Hemangioma by $^{99m}\text{Tc}$ -RBC Scintigraphy

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= 국문초록 =

## $^{99m}\text{Tc}$ -RBC 간신티그램에 의한 간혈관종의 진단

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간혈관종은 가장 흔한 양성 간종양이다. 그러나 혈관종의 감별진단은 용이하지 않다. 근래에 간혈관종의 진단에  $^{99m}\text{Tc}$ -RBC 를 이용한 간신티그램이 많이 이용되고 있다. 저자들은  $^{99m}\text{Tc}$ -RBC 를 사용하는 간신티그램을 시행하여 (1) 간혈관 신티그램상 혈류 증가에 의한 냉소변연부의 방사능 섭취 증가를 동맥기에서 관찰할 수 있었고, (2) 시간 경과에 따라 방사능 집적이 냉소의 변연부에서부터 차츰 중앙으로 진행되어 마침내, (3) 지연 촬영 영상에서는 냉소가 완전히 열소로 변하는 것을 확인함으로써, 간혈관종을 진단할 수 있었기에 문헌고찰과 함께 보고하는 바이다.

The evaluation of space occupying hepatic mass on scintigraphy is a common clinical problem. It is assumed that  $^{99m}\text{Tc}$ -RBC rapid-sequence-flow study and blood-pool images are necessary for the accurate diagnosis of hemangiomas.<sup>1-6)</sup>

We report a case of hemangioma which showed typical peripheral-to-central accumulation of  $^{99m}\text{Tc}$ -RBC on serial scintiangiogram of the liver.

### Case Report

A 54-year-old women in good health presented with a huge palpable mass in her right upper quadrant of abdomen. Her history gave no evidence of any abdominal disorder. Liver function tests were within normal limits. A  $^{99m}\text{Tc}$ -phytate hepatoscintigram showed a large cold area in the right lobe(Fig. 1). After in vivo labelling of red blood cells with 20 mCi of technetium pertechnetate,

scintiangiogram and delayed static images were obtained. The scintiangiogram showed increased peripheral flow(Fig. 2). The sequential blood pool

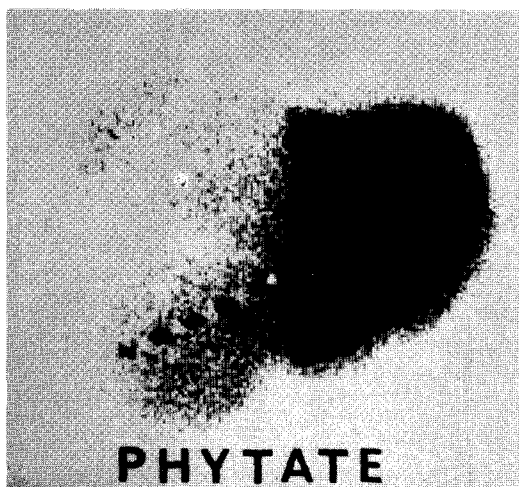


Fig. 1.  $^{99m}\text{Tc}$ -phytate hepatoscintigram shows a large cold area in the right lobe.

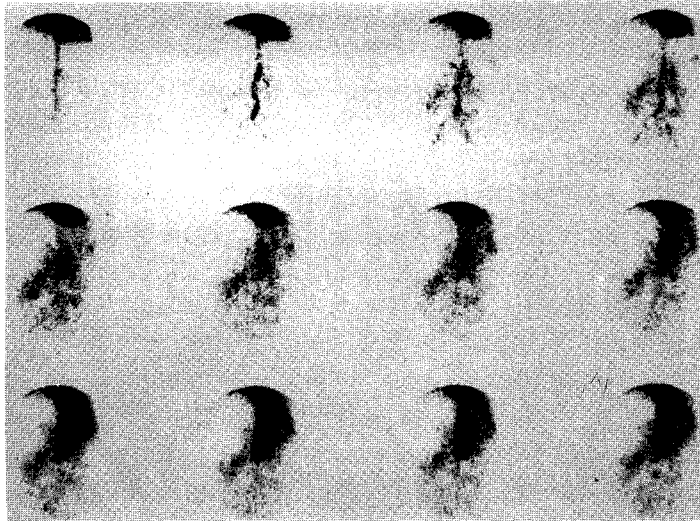


Fig. 2. Hepatoscintigram shows increased peripheral flow.

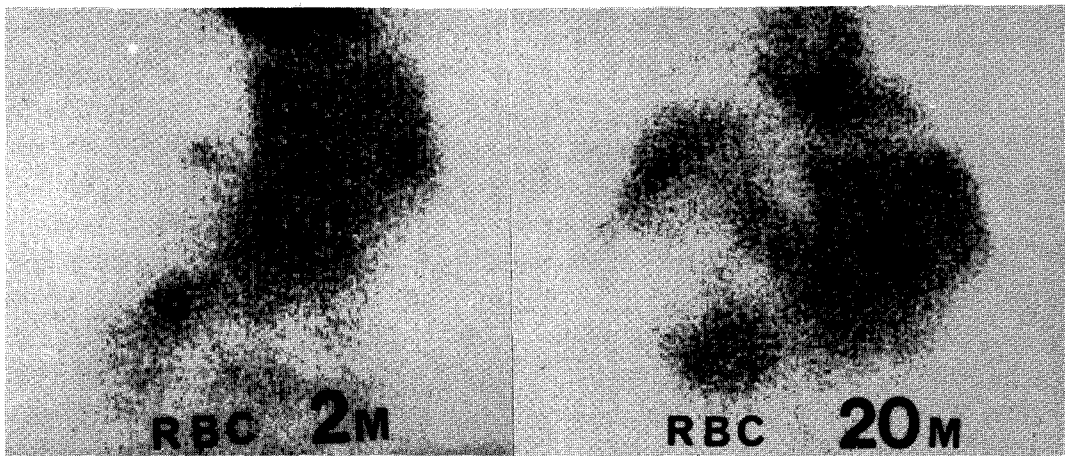


Fig. 3. The sequential blood pool images show gradual increase in blood pool activities with time.

images showed gradual increase in blood pool activities toward the center(Fig. 3). The 90-minute image showed homogeneously increased activities, the density of which was slightly greater than the adjacent normal liver(Fig. 4).

### Discussion

Cavernous hemangioma is the most common benign liver tumor and differential diagnosis from other space occupying hepatic mass is critical. The appearance of hemangioma on  $^{99m}\text{Tc}$ -phytate he-

patoscintigram and sonographic image are nonspecific and the specificity of hemangioma on CT appearance is still being debated.<sup>4,7)</sup>

Hepatoscintigraphy with  $^{99m}\text{Tc}$ -RBC has recently been recommended for the detection of hemangiomas. Front et al<sup>3)</sup> concluded that decreased flow on early image and increased blood pool activity on 1~2 hr delayed image are characteristic of hemangioma. They believed that the flow study was noncontributory and not needed to differentiate hemangioma from other focal liver lesion. But, Rabinowitz et al<sup>5)</sup> concluded that both the

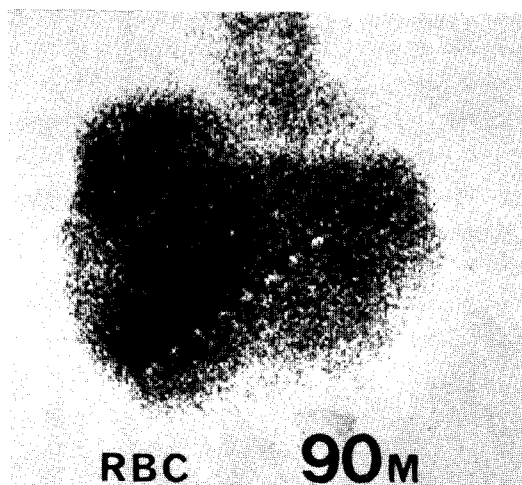


FIG. 4. The 90-minute image shows homogenously increased activities in hemangioma, the density of which are slightly greater than the adjacent normal liver.

flow pattern and delayed blood-pool images are necessary for the accurate diagnosis of hemangiomas. They experienced some cases of hepatoma showing increased blood-pool activity on delayed images and increased blood flow. So they concluded that increased blood pool activity with discordant flow not seen with any other type of lesions than hemangioma.

Our case showed increased peripheral flow on scintiangiogram and gradually increasing blood pool activity on the sequential blood-pool images using  $^{99m}\text{Tc}$ -RBC. We confirmed that peripheral increase in flow on scintiangiogram and progressively increasing blood-pool activity on sequential blood-pool images are characteristic of hepatic hemangioma.

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