

ACCUMULATION OF ^{99m}Tc -EHDP IN THE PLEURAL EFFUSION OF PATIENT WITH CANCEROUS PLEURISY

Tesuhiro Syoh, Yasuo Sasaki, Hideo Gotoh, Takakazu Asanuma, Masaru Oikawa and Toru Yanagisawa

Department of Radiology, School of Medicine, Iwate Medical University, Morioka.

We make it rule to perform ^{99m}Tc -EHDP bone scan for the detection of bone metastasis in patient with lung or breast cancer. Recently, in ^{99m}Tc -EHDP bone scanning, we have encountered a few cases which showed a high accumulation of radioactivity in pleural effusion caused by cancerous pleurisy. This communication deals with a few analytical findings.

Five out of 6 patients had primary lung cancer and the other pulmonary metastasis of carcinoma of the uterus. All the 6 patients were associated with cancerous pleurisy.

Following an intravenous injection of 15 mCi of ^{99m}Tc -EHDP, whole body bone scanning using a Toshiba GCA gammacamera was carried out at certain intervals up to 3 hours. In a few selected cases, pleural effusions were yielded by thoracentesis at certain intervals after the injection and their activities were compared with the standard solution.

All the 6 cases which received ^{99m}Tc -EHDP injection demonstrated diffuse accumulation of radioactivity on the side of pleural effusion which was different than the intraosseous accumulation.

Accumulation of radioactivity in the pleural effusion when traced by sequential scan was noticed as early as 1 minute after the time of injection.

Measurement of the radioactivity clearly showed accumulation in the drained pleural effusion. Upon centrifugation of the drained pleural effusion, the cellular portion showed lower and supernatant higher radioactivity. Injection of RI into the pleural cavity also yielded a bone image which verified the presence of RI reabsorption. Fractioning of the pleural effusion was attempted by means of standard thin-layer chromatography.

Shiegel (1975) reported the transportation of ^{99m}Tc -EHDP into the malignant pleural effusion after its injection into the cubital vein. An explanation for this transporting mechanism has remain obscure.

In view of the fact that the bone scan image was yielded by an injection of the RI into the pleural cavity, it is quite probable that the RI can be transported through the pleura both ways.

OBSERVATION ON BONE SCINTIGRAM WITH $\text{Tc-}^{99m}\text{-PP}$ IN SOFT PART TUMORS ADJACENT TO BONE

Takeo Okuyama*, Hitoshi Suzuki*, Soji Suzuki*, Tomohiro Okano**, Noriyoshi Kawaguchi*** and Katsuhisa Amino*

*School of Medicine, **School of Dentistry, Tokyo Medical and Dental University, Tokyo.

***Cancer Research Institute Hospital, Tokyo.

Soft part tumors adjacent to bone not infrequently produce destruction of the bone. The utility of $\text{Tc-}^{99m}\text{-pp}$ imaging was evaluated in twenty-nine cases of various soft part tumors, both malignant and benign in nature. Fifteen cases of them were complicated with and the remainder without bone destruction on roentgenogram.

Although ten cases in the series of 15 cases with bone destruction showed slight to moderate increase in radioactive accumulation in the site of the tumor as well as the destructed portion of bone, the focal deposit of radioactivity was not so marked in degree as in the primary bone tumors. No increase of radioactive accumulation in bone lesion was found in five cases with definite bone destruction (erosive in 2 and invasive in 3 cases).

In fourteen cases without evidence of bone involvement, a case of rhabdomyosarcoma which was surgically revealed the minimal infiltration to the femur and another case of neurinoma which produced eroded process to laminae of the cervical vertebrae were included. No radioactive deposits were observed in the sites of the bones adjacent to the tumors in the above 14 cases.

Conclusively, bone scintigraphy may be useful in differentiation of secondary bone involvement of soft part tumor from the primary bone lesions, since the former tends to show significantly less intensive accumulation than the latter. There seems to be no possibility to scintigraphically detect presence of bone destruction of the minimal degree produced by soft part tumors.