Safety and yield of real time ultrasound-assisted cutting needle biopsy performed by medical oncologist

Kunio Okamoto1, Satoru Mutsuo2, Tae Tanaka1, Souichi Fumita1, Ryota Shintani3, Hirofumi Kiyokawa3, Genichi Kato3, Hidetoshi Hayashi1

1Department of Medical Oncology, Kishiwada Municipal Hospital
2Central Clinical Laboratory, Kishiwada Municipal Hospital
3Department of Respiratory, Kishiwada Municipal Hospital

Background: Modern ultrasound (US) units are mobile, light weight and affordable. US is an ideal tool to assist with biopsy procedures. It can frequently replace computed tomographic guidance at much lower cost. We retrospectively assessed the feasibility and the safety of US-assisted cutting needle biopsy performed by medical oncologist with ultrasonologist in clinical practice.

Methods: Biopsy site, needle direction and depth of penetration were determined with US after consulting the radiological evidence. The procedure was undertaken during real time ultrasound imaging of the tumors by ultrasonologist.

Results: Over a 15-month period, sixteen patients underwent cutting needle biopsy for suspected peripheral lung tumors (n = 10), subcutaneous mass (n = 2), bone tumors (n = 2), and adrenal gland (n = 1). The size of the lesions ranged from 3.2 to 13.7 cm (median, 6.7 cm). Sensitivity for malignant neoplasms was 94%. The lesion undiagnosed on other approach including bronchoscopy was noted 6 patients. Serious complications including pneumothorax were not occurred in these patients.

Conclusion: US-assisted cutting needle biopsy is safe in the hand of oncologist with ultrasonologist, and can be performed even in poor general condition.