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Journal of the Medical Association of Thailand, Vol 96, No 3

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The Results of Comparisons between CT-Guided and Fluoroscopic-Guided Spinal Biopsy

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Abstract

Background: Various methods have been described for biopsy of spinal lesions. In the past, fluoroscopes were used to guide the performance of biopsy of spinal lesions while computed tomography (CT) is now available in many hospitals. The purpose of the present study was to determine the rate of successful diagnosis of spinal biopsy by the CT-guided technique compared to the fluoroscopic-guided technique.

Objective: To compare the success rate in diagnosis of vertebral disease and ensuing complications when using CT-guided and fluoroscopy-guided biopsy.

Material and Method: Two study groups were compared in order to establish their respective diagnostic success rates and complications. The CT-guided spinal biopsy group consisted of 10 patients (4 males, 6 females), and the fluoroscopic-guided spinal biopsy group was composed of 16 patients (6 males, 10 females).

Results: CT-guided spinal biopsy showed a diagnostic rate of 80.0% compared to a rate of 81.3% achieved by the fluoroscopic-guided technique ($p = 1.000$). For thoracic vertebrae, the diagnostic rates were 100% and 62.5% respectively. The figures were not statistically significant ($p = 0.491$), but the CT group showed a tendency towards a higher rate of success. No complication was noted in any of the patients.

Conclusion: CT-guided spinal biopsy in thoracic vertebrae had a higher success rate in the diagnosis of spinal lesion than the fluoroscopic-guided maneuver, but the results were not statistically significant. In addition, the CT-guided technique was safer for the patient.

Keywords: Needle biopsy, Fluoroscopy, Computed tomography, Spinal diseases, Thoracic vertebrae

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