ABSTRACT

This study is a continuation of previous research that proposed a practical method for measuring slice spacing. In this study, the Neusoft Phantom was used as the test object. The aim of this research is to evaluate the performance and accuracy of IndoQCT in measuring the slice spacing of Neusoft phantom images with variations in pitch and slice thickness. The research method began with scanning the phantom in the head section, which contains a ramp object. The scanning was conducted at Karawang Regional General Hospital with variations in pitch of 0.55, 0.75, 1.00, and 1.25, and variations in slice thickness of 1 mm, 2.5 mm, 5 mm, 7.5 mm, and 10 mm. The image data in microDICOM format were then analyzed using IndoQCT to measure slice spacing. In this study, two versions of IndoQCT were used, namely IndoQCT v25.c and IndoQCT v26.d. The results show that version v26.d has better performance than v25.c in measuring the slice spacing of Neusoft phantom images, as it is capable of performing measurements on both primary scan images and secondary reconstructed images. The measured slice spacing values for pitch variations are (0.79 ± 0.09), (0.74 ± 0.11), (0.73 ± 0.12), and (0.72 ± 0.11) mm, respectively. Meanwhile, for slice thickness variations, the values are (0.97 ± 0.11), (2.32 ± 0.00), (4.51 ± 0.12), (6.87 ± 0.19), and (9.03 ± 0.17) mm, respectively. The accuracy level obtained is considered satisfactory, with an average error of (13 ± 7)% for pitch variations and (9 ± 2)% for slice thickness variations.

Key Word : CT *Scan, Neusoft Phantom, Slice Spacing, Pitch, Slice Thickness,* IndoQCT