Original article

UDC: 616.24-073/-076
doi: 10.5633/amm.2023.0416

IMAGE-GUIDED PERCUTANEOUS BIOPSY OF PERIPHERAL LUNG LESIONS: ULTRASOUND-GUIDED COMPARED TO CT-GUIDED BIOPSY

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Computed tomography (CT) guided percutaneous biopsy is well established technique used to provide tissue from the thoracic lesions, both in lung parenchyma and mediastinum. However, ultrasound (US) guided biopsy of peripheral thoracic lesions should not be underestimated because it has the advantage of real time control and the absence of radiation exposure.

In this retrospective study, which included 77 patients (59 men and 18 women) with peripheral lung lesions, we compared US and CT-guided biopsies analyzing the duration of the procedure, diagnostic accuracy, and complication rates, and we tried to determine correlation with needle diameter and lesion size.

Both techniques have successfully provided samples for histology diagnosis (95.65% with US and 90.32% with CT). There is a significantly higher rate of all complications, and especially major complications in CT-guided biopsies—22.58% versus 2.17% ($p < 0.001$). CT-guided procedure lasts significantly longer than US-guided procedure (42.48 ± 5.12 compared to 16.80 ± 3.42 minutes). There is also a significant negative correlation between lesion size and duration of the procedure in CT-guided biopsy: the smaller the lesion, the longer the duration of the procedure.

Although both techniques are very reliable and almost equally successful in obtaining samples for histopathology analysis, because of a higher rate of major complications and a longer duration of the procedure with CT guidance, ultrasound-guided biopsy should always be considered as the primary approach for peripheral lung lesions.

Acta Medica Medianae 2023;62(4):127-132.

Key words: *ultrasound, computerized tomography, thoracic biopsy, lung biopsy*