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The Effect of Compensating Filter on Image Quality in Lateral Projection of Thoracolumbar Radiography

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Abstract : The compensating filter is placed between the patient and X-ray tube to compensate various density and thickness of human body. The main purpose of this project is to study the effect of compensating filter on image quality in lateral projection of thoracolumbar radiography. The study was performed by an X-ray unit where different thicknesses of aluminum were used as compensating filter. Specifically the relationship between thickness of aluminum, density and noise were evaluated. Results show different thickness of aluminum compensating filter improved the image quality of lateral projection thoracolumbar radiography. The compensating filter of 8.2 mm was considered as the optimal filter to compensate the thoracolumbar junction (T12-L1), 1 mm to compensate lumbar region and 5.9 mm to compensate thorax region. The aluminum wedge compensating filter was designed resulting in an acceptable image quality.

Keywords : compensating filter, aluminum, image quality, lateral, thoracolumbar
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