

## Usefulness of pinhole collimator in differential diagnosis of metastatic disease and degenerative joint disease in the vertebrae; Evaluation by receiver operating characteristics (ROC) analysis

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In order to evaluate the diagnostic efficacy of pinhole collimator (PHC) imaging combined with an X-ray for vertebral metastasis, our prospective study has employed receiver operating characteristics (ROC) analysis in 21 patients, 11 with osseous metastasis and 15 with degenerative joint disease in the lumbar vertebrae.

PHC imaging provided better anatomic information on the extent of  $^{99m}\text{Tc}$ -MDP accumulation. PHC vertebral scintigraphy had a considerable impact on the decision-making process, although with variations and not very satisfactory results among the physicians with little experience. Our study suggests that PHC imaging and X-ray film are useful in differentiating between osseous metastasis and degenerative joint disease in the vertebra.

**Key words:** pinhole collimator, bone scintigraphy, Receiver operating characteristics analysis, Bone metastasis, Degenerative joint disease