

THE USEFULNESS OF CARDIOFOCAL COLLIMATOR IN STATIC RENAL IMAGING

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INTRODUCTION

Static renal imaging is best performed using pinhole collimator. But this technique takes too much time and generally parallel hole collimators are preferred for static renal imaging in nuclear medicine departments.

The purpose of this study was to investigate the usefulness of the cardio-focal collimator used for myocardial perfusion imaging in static renal scintigraphy.

MATERIALS AND METHODS

Fifteen children (mean age: 6.2 years) referred to nuclear medicine department in order to investigate cortical renal lesions were imaged. 200mCi/kg Tc 99m DMSA was administered intravenously.

Four hours after Tc-99m DMSA injection, static views from posterior projection were obtained using low energy general purpose collimator (LEGP) in 256x256 matrix for 5 minutes (GE XR/T gamma camera). Then additional three more static views from posterior projection were obtained with low energy high resolution collimator (LEHR), Cardiofocal collimator (Siemens Multispect-2 gamma camera) and pinhole collimator (GE XR/T gamma camera). The total counts obtained in 5 minute using LEGP collimator was used for imaging with each collimator. Images were evaluated visually for image quality.

The visual interpretations were made by four nuclear medicine physicians as follows:

Very good:4, good:3 moderate:2, and bad:1.

RESULTS AND CONCLUSION

The images obtained from the cardiofocal collimator were found to be the best by one of four physicians. And the remaining physicians found it to be the second best after pinhole collimator.

The mean values were,

Pinhole :	3.4	0.9
Cardiofocal:	2.7	0.3
LEHR	2.6	0.4
LEAP :	2.4	0.5

Cardiofocal collimator took the second highest point from nuclear medicine physicians at the point of image quality.

This study suggests that though pinhole collimator may be the best collimator for static renal scintigraphy, cardio-focal collimator might also be used for static renal imaging.