

Experience on Clinical Application of a PH/GAMMA Divcon Collimator for Children

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In the various kinds of the nuclear medicine examination which have been operating for the children from new born baby to the student of almost adult age, we have been experienced in the inexpedient on use of PH/GAMMA Camera equipped with conventional parallel collimator as it is required diverging techniques for new born baby, examination due to its extremely tiny body, and converging techniques were required on the examination for the student with larger body.

The problems mentioned above were solved by an adoption of PH/GAMMA Divcon collimator which is available for way on converging and diverging techniques in any size.

The resolution and the sensitivity in converging and diverging mode of the Divcon Collimator were also evaluated in comparison with conventional 140 KeV high resolution

collimator.

Divcon Collimator has almost same thickness to a 140 KeV high resolution collimator, however, there is some different way in use.

Both of converging and diverging mode are capable in using properly either of both side of Divcon Collimator by mean of turning it over on the detector. Further evaluation with respect to diverging ratio, converging ratio, resolution and sensitivity compared to a 140 KeV high resolution collimator was made through the phantom utilization.

As a result of the evaluation which the Divcon Collimator was used for clinical study practically after the basic experiment, a conclusion was provided that Divcon Collimator could be very much profitable for the children examination.

Clinical Uses of a Converging Collimator with a Short-focus

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The improved resolution of images is attainable through the image magnification by means of a pin-hole or a converging collimator.

A 1800-hole converging collimator with a focal distance of 38cm was constructed and compared to the standard multi-hole collimator and pin-