A Comparison of Radiation Dose and Image Quality in Hysterosalpingography Using Conventional and High Kilovolt Techniques

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Objective: To compare the dose area product, effective dose, and image quality of hysterosalpingography using conventional and high kilovolt techniques.

Patients and Methods: Image quality and patient dose were assessed for hysterosalpingography examinations performed on 30 patients at the University of Malaya Medical Centre. Dose-area product was measured and the effective dose estimated using conversion factors tabulated by the National Radiological Protection Board of the United Kingdom. Image quality was assessed by three radiologists based on an objective set of criteria.

Results: The results showed no significant decrease in patient dose with the use of high kilovolts, while screening times contributed substantially to the total patient dose received. The mean dose-area product for the conventional kilovolt technique was 4.95 Gy cm² and 4.68 Gy cm² for the high kilovolt technique. The effective dose yielded 1.36 mSv for conventional kilovolts and 1.33 mSv for high kilovolts. There was no significant difference in image quality with the use of high kilovolts, the average image quality score being 33 and 31 for conventional kilovolts and high kilovolts, respectively.

Conclusion: Hysterosalpingography using the high kilovolt technique is comparable to the conventional technique in terms of both patient dose and image quality. (J HK Coll Radiol 2001;4:133-136)

Key words: Dose-area product, Effective dose, Hysterosalpingography, Image quality, Technique factors