are 10.4cm (±0.7cm) and 10.5cm (±0.8cm) on the left. The width are 6.0cm (±0.5cm) on the right and 5.9cm (±0.5cm) on the left. In 15 women, the length of the right kidneys are 9.5cm (±0.9cm) and 10.0cm (±1.0cm) on the left. The width are 5.6cm (±0.5cm) on the both sides. In hypertensive cases, shrinkage of the kidney is observed to some extent.

III. The size of the kidney scan of renal stone and ureteral stone

In 17 patients with renal stone, the length of the kidneys are 10.6cm (±1.3cm) and width are 6.1cm (±0.8cm) on the affected side. On the normal side the length are 11.4cm (±1.0cm) and width are 6.5cm (±0.9cm). In 16 patients having ureteral stone, the length of the kidneys are 11.0cm (±1.3cm) and width are 6.1cm (±0.6cm) on the side where ureteral stone present. On the normal sides the length are 11.4cm (±0.9cm) and width are 6.5cm (±0.5cm). The length of the kidney with ureteral stone seems to be more variable than that with renal stone.

II. Symposium I. Apparatus

Simultaneous Performance of Isosensitive Scanning and Bilaminoscanning

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In the conventional single-detector scanning technics, only superficial layers of the body are scanned because of tissue absorption and the decrease of sensitivity with detector distance. For this reason we recently introduced isosensitive scintiscanning in the developmental project of the medical universal human counter (MUCH). The essential feature of isosensitive scanning is the adaptation of two opposed detectors synchronized and moved in a rectilinear scanning system with their output combined into a single recording. The advantages of isosensitive scanning are; (a) The delineation of the radioisotope distribution is completely independent of depth so that any deposition of radioactivity has an equal opportunity to be visualized. This makes the system suitable for the detection of a deep-seated abnormality in a large organ, for use in multinuclide scanning for simultaneous visualization of multiple organs in varied depth, and for quantitative estimation of regional pulmonary blood flow in the lung where the evaluation of the entire organ is necessary. (b) Second, the employment of two detectors reduces the amount of radioactivity which must be administered.

Thus, the isosensitive scan can provide the depth-independent information similar to that of the usual x-ray projection. It should be performed first to survey the entire depth, and then laminoscanning on accentuation of specific layers should follow it is necessary to accentuate the lesion observed. Generally, most scanning procedures require a long period of time.

For practical convenience a new technic was developed to obtain an isosensitive scan and bilaminoscans simultaneously. The essential features are the addition of two detectors placed obliquely to the two opposed-detector system and the means of mixing the signals additively from each detector in three combinations, recording them simultaneously with four heads of mechanical multidot tapper, two sheets of laminoscan upper and lower, one isosensitive scan, and conventional anterior scan. Clinical advantages were also demonstrated of ^{131}I-MAA lung scans ^{198}Au-colloid liver scans and Na $^{99m}TcO_4$ brain scans.

Although there is Kuhl's excellent report on laminoscanning technic, it is our opinion that the present study is a first step in scanning polylaminally with a multiple-detector system. This is an approach to routine use of laminoscanning in clinical practice. Further improvements are needed to make this a more useful diagnostic tool for identification of smaller lesions.