

marrow by a factor of four. They felt the differences in dose estimates are minor compared with the unknown variability that occurs with age of the metabolic parameters.

Two-Orthogonal-View Method for Quantification of Rad Dose to Neck Lesions in Thyroid Cancer Therapy Patients. K. F. Koral, R. S. Adler, J. E. Carey, R. C. Kline, W. H. Belerwaltes; University of Michigan Medical Center. *Med Phys* 9:497-505, 1982

Many clinicians now use Anger scintillation cameras fitted with a pinhole collimator for imaging the thyroid gland; however, use of the pinhole collimator complicates the determination of organ depth and size. This paper presents a method to estimate volume and to calculate lesion radiation absorbed dose after the administration of therapeutic amounts of I-131. First, it is necessary to calculate the X and Y camera gain in the computer image in mm/matrix element by using an orthogonal hole pattern commonly used for quality assurance tests. Uptake measurements must also be corrected for variation of pinhole sensitivity with distance from the center of the detector, which is accomplished with a Ba-133 flood image. Anterior and lateral views of the thyroid are then taken using the pinhole collimator. Because the image is magnified, an edge-detection algorithm can be used to quantify organ "size." Measurement of the magnification is accomplished by locating the relative position of the organ in three dimensions. The basic principle is that of taking two views of the patient, knowing the relative position of the detector for the two views. Although the authors used a rotating Anger camera for this study, manual rotation of a seated patient in a controlled manner could also be used. If the lesion is isolated in both views, the volume of the lesion can be estimated, together with an upper boundary; and the absorbed dose calculated using the MIRD formalism. The largest source of error is in the volume estimation.

Static and Real-Time B-Mode Sonography of Arterial Occlusions. G. A. W. Gooding, D. J. Effeney; University of California, San Francisco, Veterans Administration Medical Ctr., San Francisco, CA. *Am J Roentgenol* 139:949-952, 1982

The authors report both static and real-time findings in the examination of 110 patients. Twenty-three occluded arteries were identified manifesting three sonographically detectable patterns. A normal B-Mode appearance with absence of pulsation on real-time examination was seen in 18 of the 23 vessels; in four there was no detectable vascular channel, and in one the occluding thrombus was demonstrated. In static scans of the majority of vessels, therefore, the appearance of an occluded channel was indistinguishable from that of a patent one. Real-time imaging that failed to show pulsation provided the diagnosis of occlusion. The authors suggest that static B-Mode imaging of arteries should always be

accompanied by real-time examination and, when available, pulse Doppler studies. Representative scans are provided.

Changes in Placental Ultrasonic Appearance I: Incidence of Grade III Changes in the Placenta in Correlation to Fetal Pulmonary Maturity. R. W. Quinlan, A. C. Cruz, W. C. Buih, M. Martin; University of Florida College of Medicine, Gainesville, FL. *Am J Obstet Gynecol* 144:468-470, 1982

In a study involving 174 amniocentesis examinations for fetal pulmonary maturity, the authors found Grade III changes in the placenta in only 7%. Sensitivity of the placental grading system in predicting pulmonary maturity was only 5%, and a false prediction of fetal pulmonary maturity was encountered in 42% of patients with Grade III placental changes. Those pregnancies in which Grade III changes falsely predicted fetal pulmonary maturity were all complicated by maternal hypertensive disorders. Successful placental grading could not be accomplished in 24.1% of those studied because the placenta lay in a posterior implantation.

Changes in Placental Ultrasonic Appearance II. Pathologic Significance of Grade III Placental Changes. R. W. Quinlan, A. C. Cruz, W. C. Buih, M. Martin; University of Florida College of Medicine, Gainesville, FL. *Am J Obstet Gynecol* 144(4):471-473, 1982

Of a series of 48 pregnancies in which Grade III placental changes were detected, the authors encountered an incidence of 78% of significant perinatal problems when the findings were preterm. Hypertensive complications such as preeclampsia, 41%, and chronic hypertension, 15%, were encountered as well as a 27% incidence of intrauterine growth retardation. The authors suggest that the finding of Grade III changes in a placenta of a pregnancy suspected of being postdate will reinforce that clinical impression, and the unexpected finding of Grade III changes may well serve to predict the development of problems later in that pregnancy.

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ERRATUM

In the article entitled "Absorbed Dose Estimates for Positron Emission Tomography (PET): C¹⁵O, ¹¹CO, and CO¹⁵O," November 1982, Volume 23, pp. 1031-1037, Table 3, p. 1034, contains an error for critical organ dose. For the spleen, Table 3 should read 91 mrad/mCi and 1365 mrad/15mCi for both bolus inhalation and bolus infusion. Text reference to these doses is correct.