Books Received


Disorders of the Patellofemoral Joint, (Second Edition) John P. Fulkerson and David S. Hungerford, Williams & Wilkins York, PA, 1990, 294 pp. $65.00


Handbooks in Radiology: Head and Neck Imaging. H. Ric Harnsberger, Mosby-Year Book, St. Louis, MO, 547 pp. $29.95

ITEM 2: Diagnostic Radiation Exposure in Pregnancy

Based on the best knowledge available today, the risk of congenital malformation is negligible for doses of 5 rads or less, and is significantly increased above control levels only at doses above 15 rads. Thus, the risk of a radiation-induced congenital abnormality from a dose of 6.2 rads would be negligible. The possibility of such abnormalities is further reduced because the total dose of 6.2 rads was delivered in two parts separated by a radiation-free interval of 3 weeks. Because the first dose of 3.1 rads was delivered at the end of the second week of pregnancy (at the end of the preimplantation period), the greatest risk is for embryonic death, not malformation. The second 3.2-rad dose was delivered in the period of organogenesis, but the dose would be well below the practical threshold for any significant risk of induced abnormality (the risk becomes significant only for doses above 15 rads). The risk of skeletal abnormalities would also be negligible. Although mental retardation was observed after high-dose rate, in utero exposure from the A-bomb, it was confined mainly to the 8–15 weeks after conception, with none observed in those exposed 0–7 weeks after conception. In any case, even if the two 3.1-rad doses had been given on the same day, this would not be sufficient indication for a therapeutic abortion.

References


ITEM 3: Reduction of Medical Radiation Exposure

Current radiation protection guidelines are based on the intentionally conservative assumption that small increments of additional radiation dose can lead to increased risk of stochastic effects. Therefore, it is desirable to lower the radiation dose of every individual, in keeping with the ALARA principle. It also is desirable to minimize possible genetic effects. All of these factors contribute to a philosophy of reducing and maintaining both individual and collective doses as low as reasonably achievable.

Nonstochastic effects occur only after exposure to rather large amounts of radiation, well above the levels of exposure for individuals exposed to diagnostic radiation. The internal deposition of long-lived radioactive materials can be of concern if the activity of the materials is sufficiently high. Fortunately, most of the radionuclides used in nuclear medicine have short half-lives and are administered in sufficiently low activities that they pose very little long-term concern.

The Atomic Energy Act of 1954 established the Atomic Energy Commission and authorized the distribution of byproduct materials to properly trained individuals. The Act did not address the lowering of medical radiation doses.