A 44-year-old female underwent three-phase bone scintigraphy for an evaluation of right hip joint pain. The blood-flow and blood-pool images show a pelvic blush with a photopenic center (doughnut) prior to bladder filling. On the three hour delayed image, the pelvic uptake disappeared. The scintigraphic findings indicated the possibility of an early pregnancy. However, plain radiography demonstrated an intrauterine device. A uterine doughnut developed as a result of photon attenuation of intrauterine device. (Nucl Med Mol Imaging 2007;41(1):68-69)

Key Words: bone scintigraphy, uterine doughnut, uterine blush, intrauterine device, artifact
Fig 2. Plain radiography of the pelvis shows an intrauterine device (IUD) in the pelvic cavity. A gamma energy (140 Kev) of Tc-99m was attenuated as it passed through the tissue, with the loss of more than 50% of counts in 5 cm of soft tissue. The photon defects developed by photon attenuation were observed by external or internal objects. Internal attenuating objects include permanent cardiac pacemakers, joint prostheses, breast or penile implants, food in the stomach, barium from previous gastrointestinal studies, etc. External attenuating objects commonly include rings, earrings, chains, coins, keys, buttons, belt buckles, etc. These artifacts may be easily recognized by their shapes and locations. However, if a photon defect is not usual in shape and location, it might be mistaken for a true lesion. In this case, the uterine doughnut was observed as a photon attenuation artifact developed by IUD.

References