

Introduction: Treatment of symptomatic uterine fibroids has largely relied on hysterectomy. A new interventional radiology procedure, involving bilateral embolization of the uterine arteries that supply blood to the fibroid, offers a promising alternative. Because the procedure is centered over the pelvis, we investigated ovarian dose and subsequent genetic risk, uterine dose as a surrogate for embryonic dose in the case of occult pregnancies, and effective dose. **Methods:** All fluoroscopic and radiographic techniques used during the procedure were recorded by a medical physicist. Approximate field sizes and anatomical location, SSD, SID, II size, and beam angulation were noted. Extensive dosimetric measurements were performed on the fluoroscopic unit for all of the corresponding patient techniques, thus allowing estimates of the entrance exposure, and effective field size, energy and HVL. The organ doses were estimated using the US FDA CDI3 computer program. **Results:** For a conservative procedure, i.e., requiring a very skilled radiologist, well-collimated fields, and minimal filming and fluoroscopy, the patient dose can be reduced by at least a factor of 6 to 10, as compared to a non-conservative approach. Our conservative procedure for an average-size patient results in an effective dose (neglecting genetic risk) of 7.0 mSv, a uterine dose of 6.1 cGy, and an ovarian dose of 5.0 cGy, which has a corresponding excess relative genetic risk of 1.1 %. **Conclusions:** If one maintains scrupulous attention to radiological issues, uterine fibroid embolization is expected to have a minimal population impact, while offering a much-needed alternative to surgery.