



## Commentary

### Can Three-Dimensional Rotational Angiography Road Map be used for Individualized Guidance of Uterine Artery Catheterization as in Intracranial Arteries Intervention?

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It is widely accepted that Uterine Artery (UA) Embolization (UAE) is an effective, minimally invasive therapeutic strategy for symptomatic uterine fibroids and PPH of various causes along with conventional surgical treatment of hysterectomy and myomectomy. Also it is an effective interventional procedure for the treatment of uterine vascular malformations, pregnancy incisions, denomyosis and cervical cancer with bleeding. It has the advantage of being fast and repeatable and can be performed without general or lumbar anaesthesia. Moreover, it preserves the uterus and makes future menstruation and fertility possible [1-3]. Sometimes, UAE can be considered as an alternative to myomectomy or hysterectomy [4,5].

Catheterization of the UA is a prerequisite for a subsequent embolization treatment. This process is time consuming because, sometimes, it is difficult to visualize UA origins under conventional Two-Dimensional (2D) angiography owing to unappreciated vessels overlapping or foreshortening, resulting in an increase in the procedure time, contrast agent dose, and radiation dose. However, the procedure must be finished quickly and accurately during acute PPH and cervical cancer with bleeding; moreover, it is very important to keep the exposure as low as possible for patients who are young and willing to remain fertile.

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Three-Dimensional (3D) road maps and navigation techniques have shown their usefulness and potential capacity for time and dose reduction in interventional catheter directed procedures for intracranial arteries [6,7]. The author of the article theorized that 3DRA seemed to be feasible in pelvic region arterial interventions such as in the intracranial arteries without cardiac and respiratory movements in the upper abdomen and thorax. Thus, he attempted to adopt this technique to guide the catheterization of the UA and compare its feasibility and advantages to those of conventional 2D road maps. Another bright spot of the study was they can performed 3DRA and acquired images of both sides of the internal iliac arteries and UA origins together by placing a 5-F pigtail catheter in the distal abdominal aorta, instead of performing rotational angiography for each internal iliac artery.

The result clearly demonstrated that compared with patients in the 2D road maps, 3DRA had shorter total procedure time, catheterization time, and fluoroscopy time, as well as smaller contrast medium volume and irradiation. So the study has demonstrated that 3DRA and 3D road mapping are feasible and accurate for individualized catheter guidance during UAE. Although a limitation of this study is the low number of cases and different diseases involved, it still is a very creative method by which the efficiency of the procedure had improved greatly without increasing the cost and risk. Interventionists with less experience in performing the treatment were also able to find a suitable viewing angle of the UAs from 3DRA and successfully perform catheterization. No additional complications of UAE had been found when using a 3D road map compared with using a 2D road map.

Therefore, we believe that 3DRA is a good selection for individualized guidance catheterization of UAs and it can be popularized in clinics in the future.

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