

# Microcatheter manipulation for bilateral superselective angiography without micro-guidewire assistance for pelvic organs

Institute for Image Guided Therapy, Osaka Japan



**Disclosures: No COI**

## Learning objects

How to reduce the procedure time.

How to reduce radiation exposure.

How to reduce contrast material.

How to avoid vascular spasm.

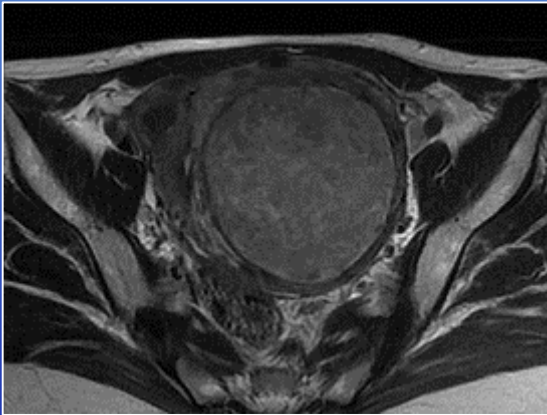
How to reduce the cost of procedure.

A technique to insert a microcatheter to pelvic arteries without assistance by a micro-guidewire.

## Backgrounds

In the pelvic cavity there are many diseases that can be treated via interventional radiology targeting arterial blood supply. Beyond benign conditions like uterine fibroids and benign prostatic hyperplasia, malignant tumors such as bladder cancer, uterine cancer, ovarian cancer, and bone tumors can also benefit from this approach. By selectively inserting microcatheters into tumor-feeding arteries, we can achieve tumor reduction not only through embolization but also by delivering anticancer agents directly. However, selectively accessing pelvic arteries with microcatheters is not always straightforward and often poses a significant burden on the operator. The procedure requires specialized medical devices, prolonged procedural time, increased patient radiation exposure, and additional contrast agent usage. We have developed a novel technique using the smallest available devices to efficiently reach target vessels and perform effective treatments.

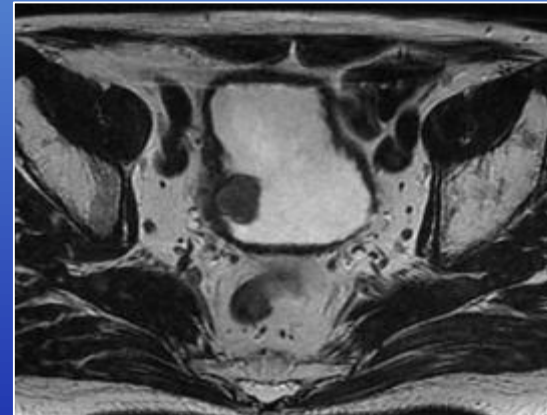
**Uterine fibroma**



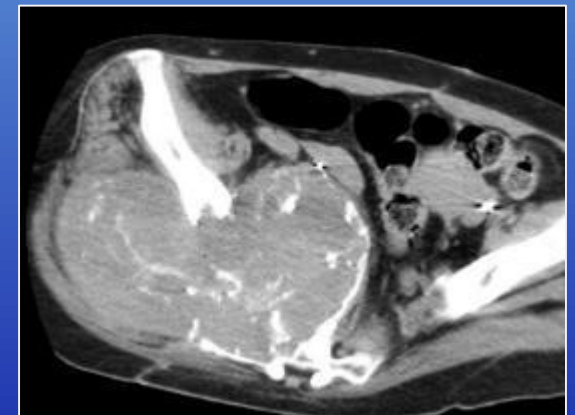
**Prostatic hypertrophy**



**Recurrent bladder cancer**



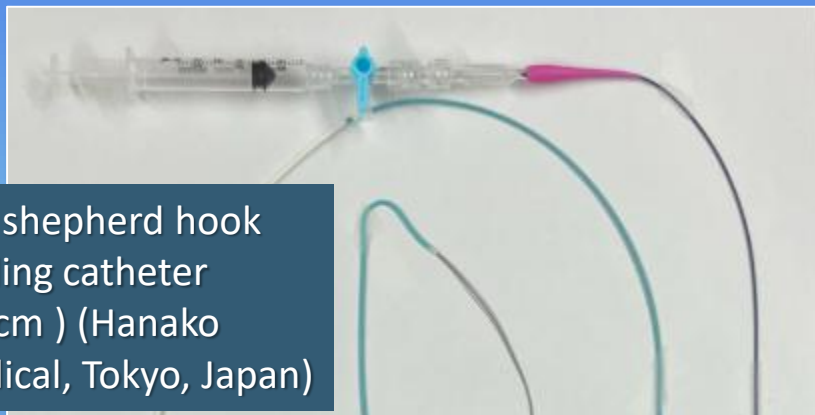
**Giant cell tumor**



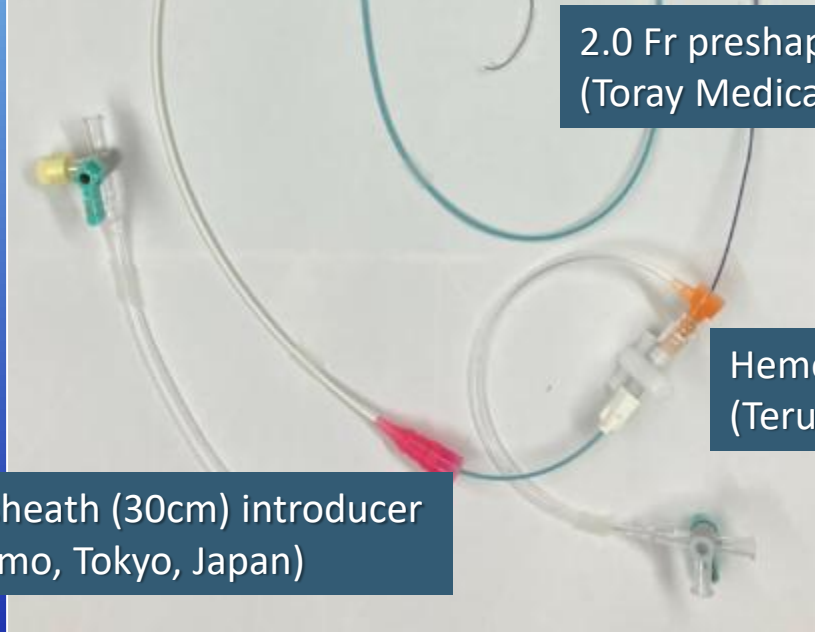


## Procedural detail; Devices and apparatus

### Microcatheter assembly for pelvic intervention



4 Fr shepherd hook guiding catheter ( 70cm ) (Hanako medical, Tokyo, Japan)



2.0 Fr preshaped microcatheter (Toray Medical, Tokyo, Japan)

Hemostatic valve (Terumo, Tokyo, Japan)

4 Fr sheath (30cm) introducer (Terumo, Tokyo, Japan)

Pre-shaped microcatheter

Video [Crick here](#)



3-D reconstruction of vascular images from contrast enhanced CT (TeraRecon, North Carolina, USA)



CT combining angiomachine (Canon Medical, Tokyo, Japan)

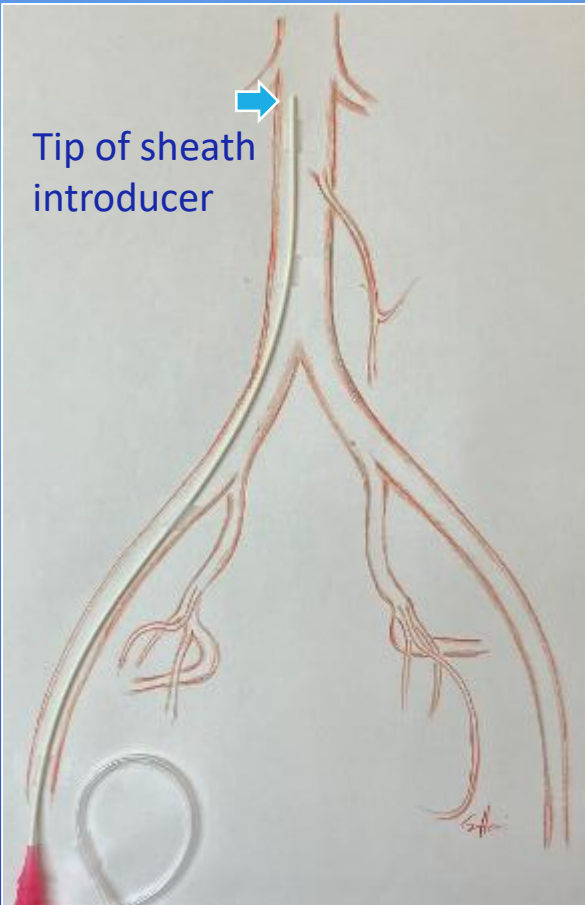


Contrast material injector for microcatheter

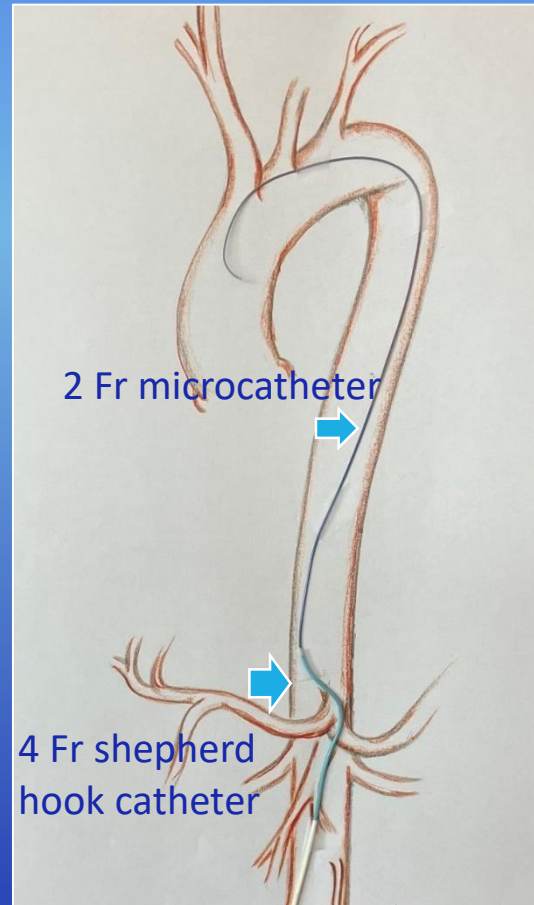
MICA-30 (Clinical Support, Osaka, Japan)

# Procedural detail; Guiding catheter insertion to the aorta

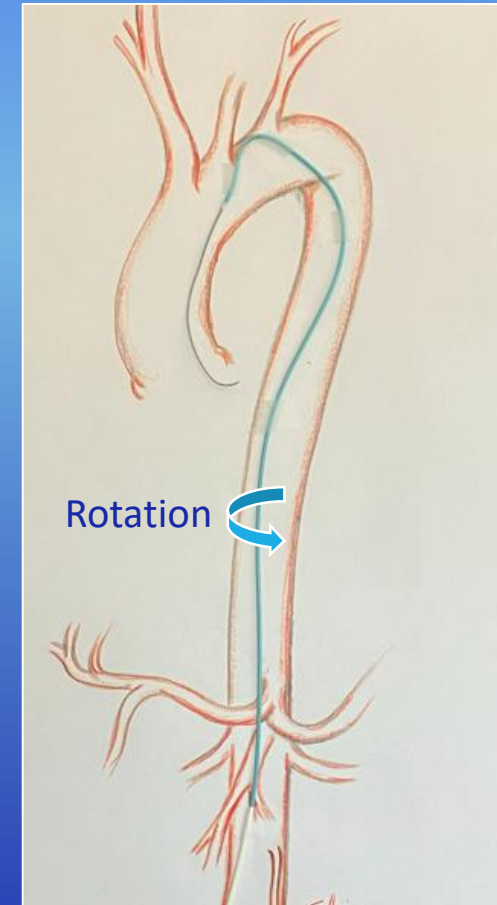
Placement of sheath introducer in the middle of aorta



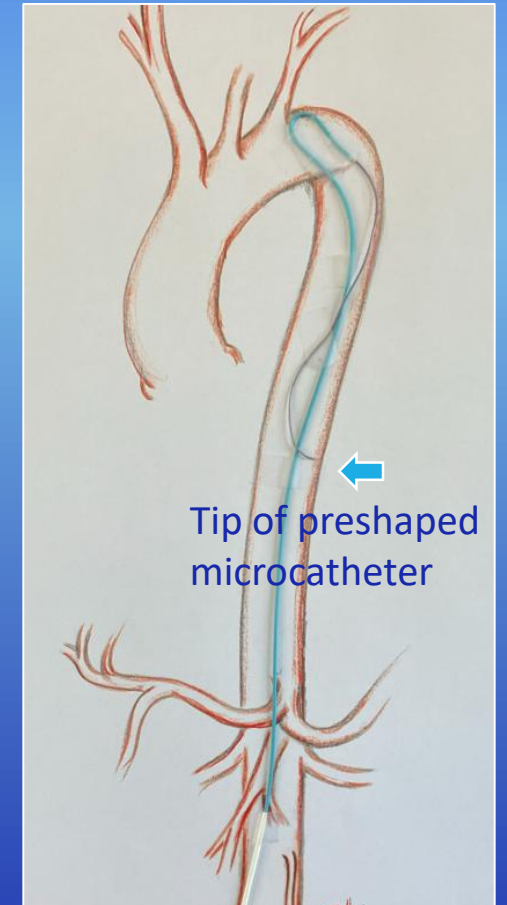
Advancement of the assembly by microcatheter guidance



Advancement of guiding catheter to the aortic arch



Placement of guiding catheter to the descending aorta

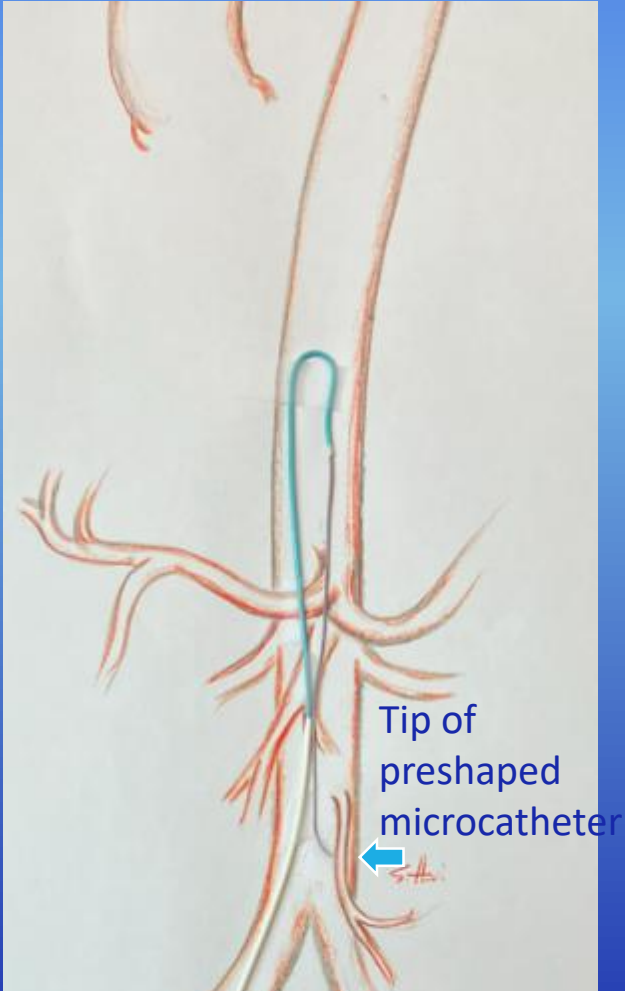


**Catheter manipulation guided by a preshaped microcatheter.**

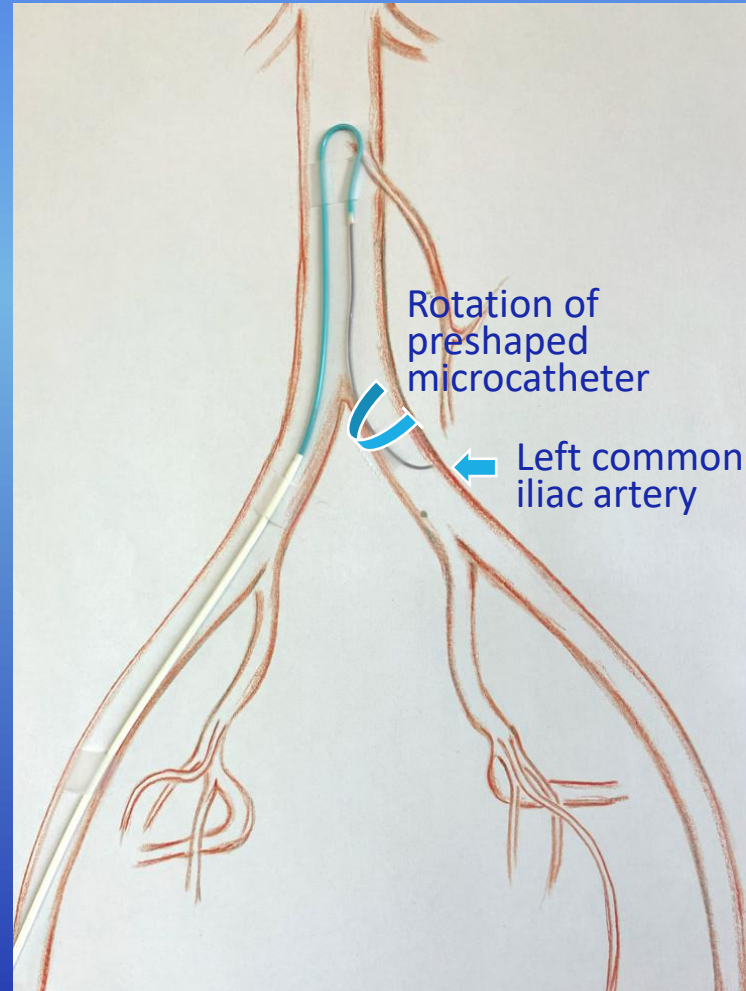


## Procedural detail; Navigation to the common iliac arteries

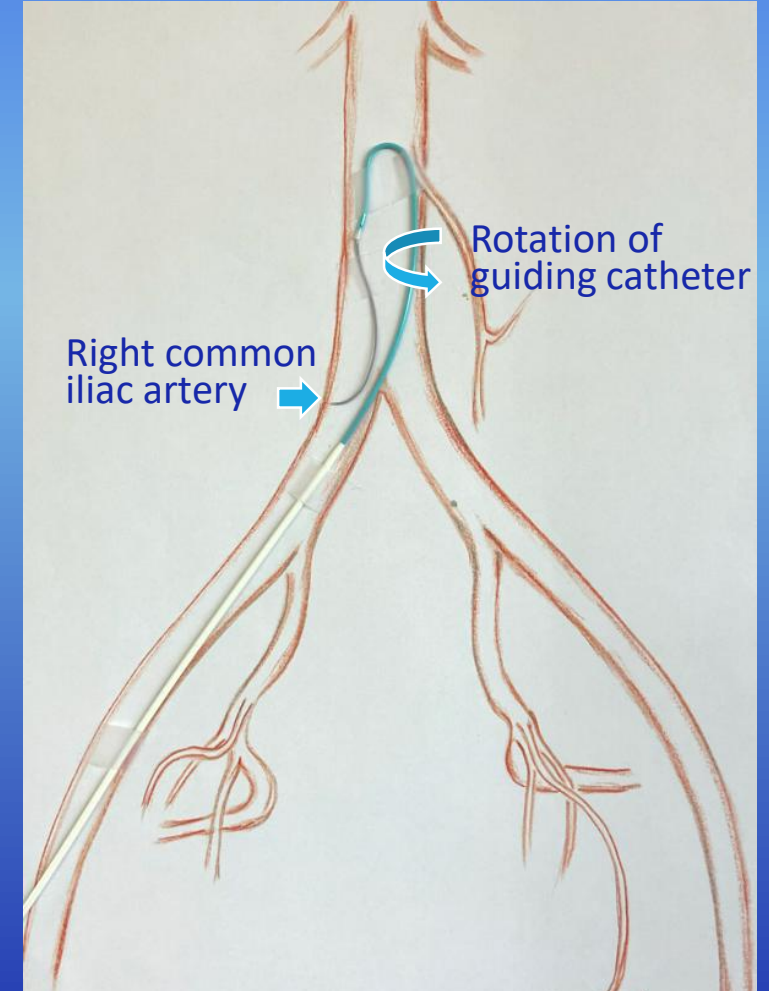
Descent of the assembly to the middle of aorta



Selection of the common iliac artery



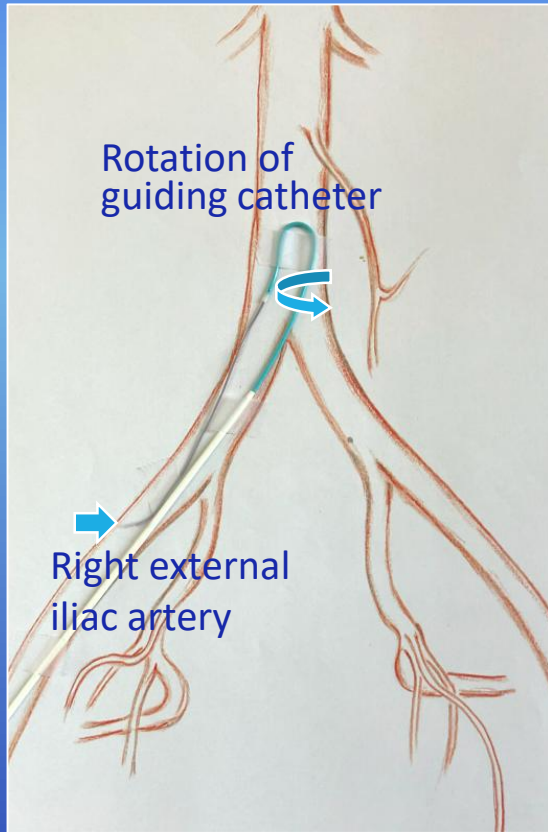
Selection of the contralateral common iliac artery



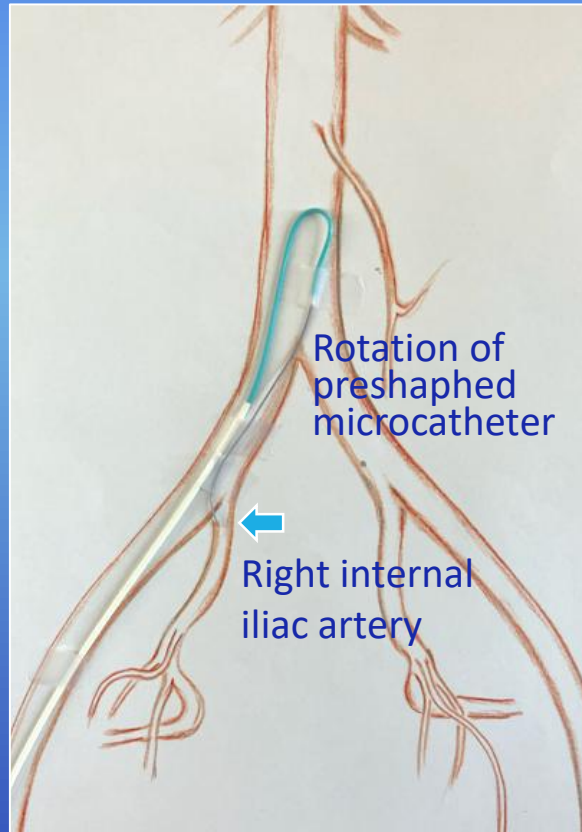
**Microcatheter navigation to both common iliac arteries by rotating microcatheter or guiding catheter .**

## Procedural detail; navigation to the internal or external iliac arteries

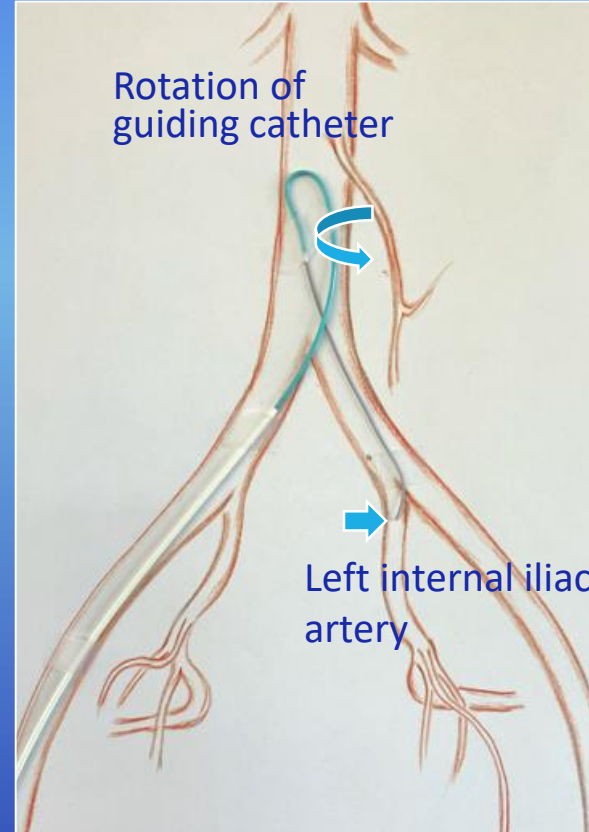
Navigation to the right external iliac artery



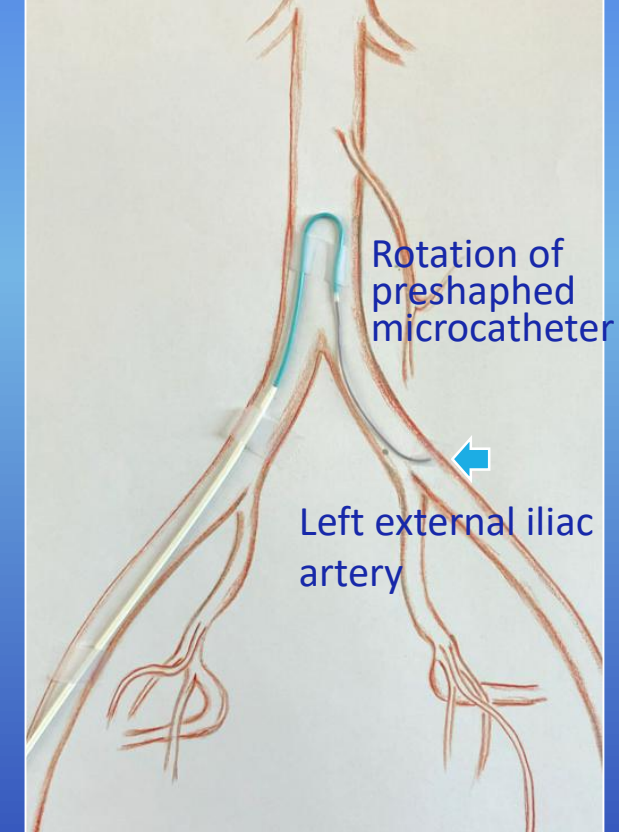
Navigation to the right internal iliac artery



Navigation to the left internal iliac artery



Navigation to the left external iliac artery

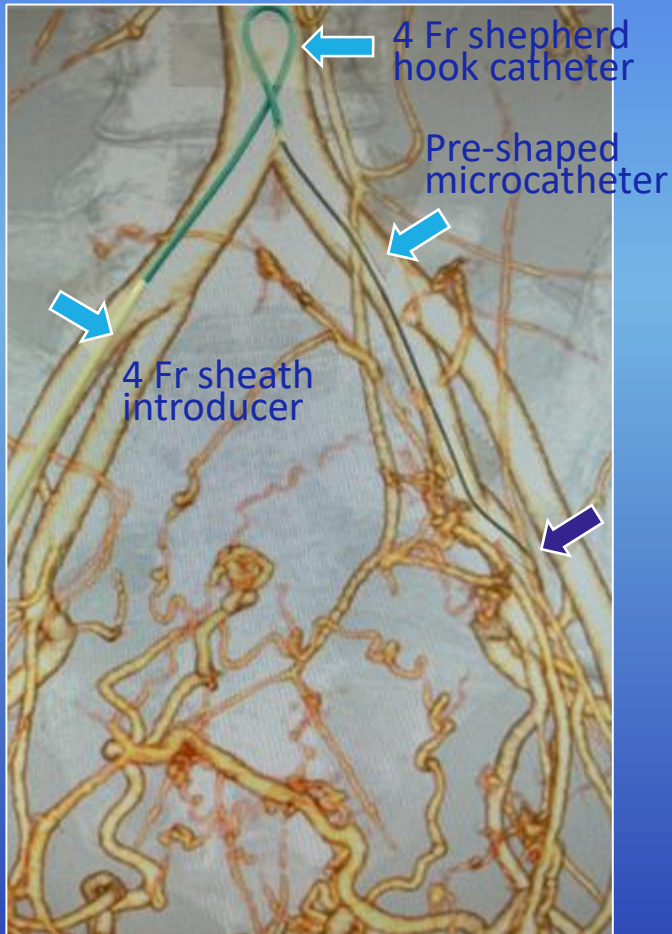


Navigation to external or internal iliac arteries by rotating microcatheter or guiding catheter .

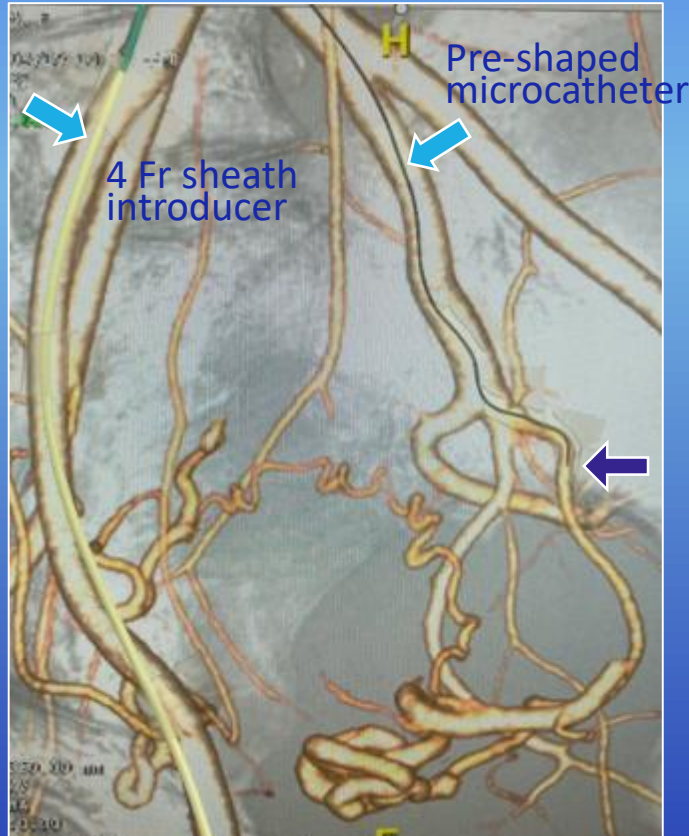


# Procedural detail: Navigation to the left uterine artery

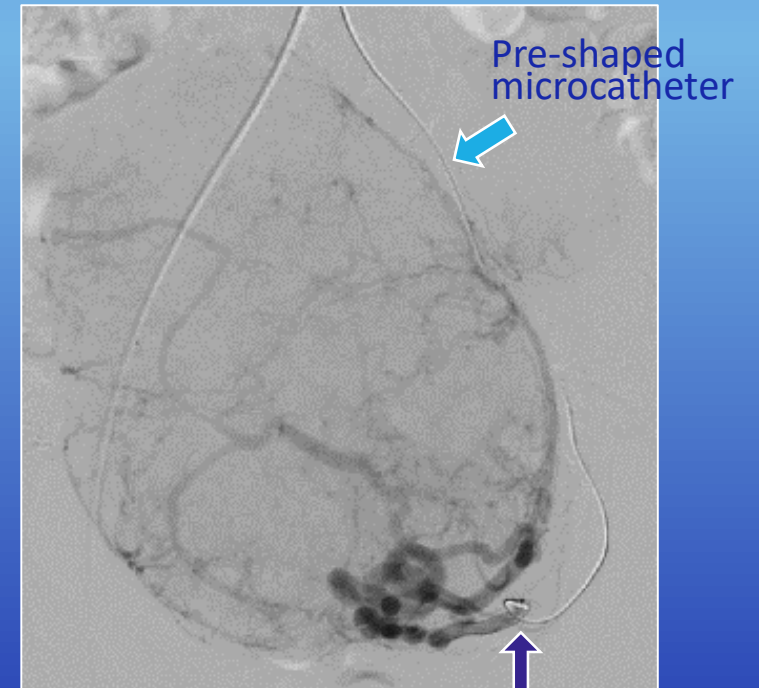
### Left internal iliac artery



### Left uterine artery



### Left uterine artery

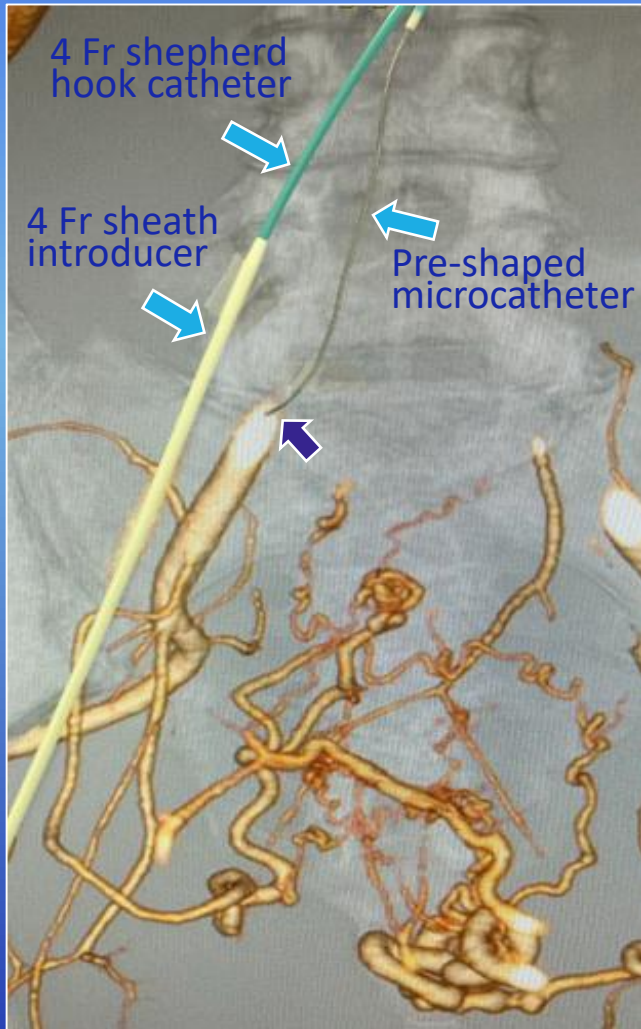


Selective microcatheter insertion without microguide wire.



# Procedural detail: Navigation to the right uterine artery

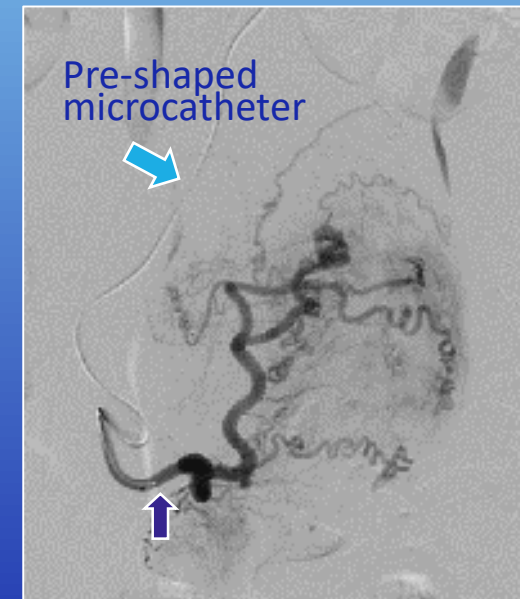
### Right internal iliac artery



### Right uterine artery



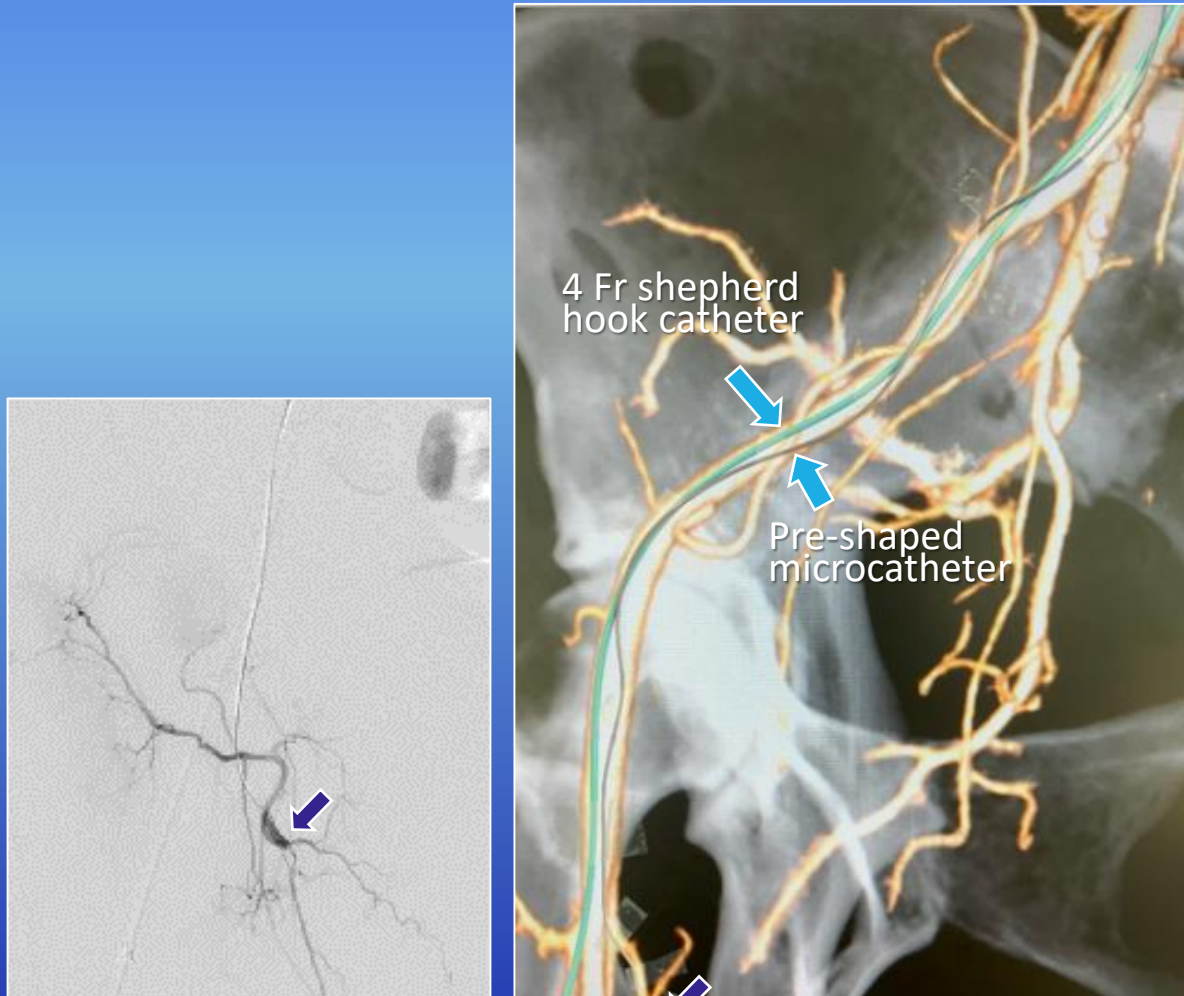
### Right uterine artery



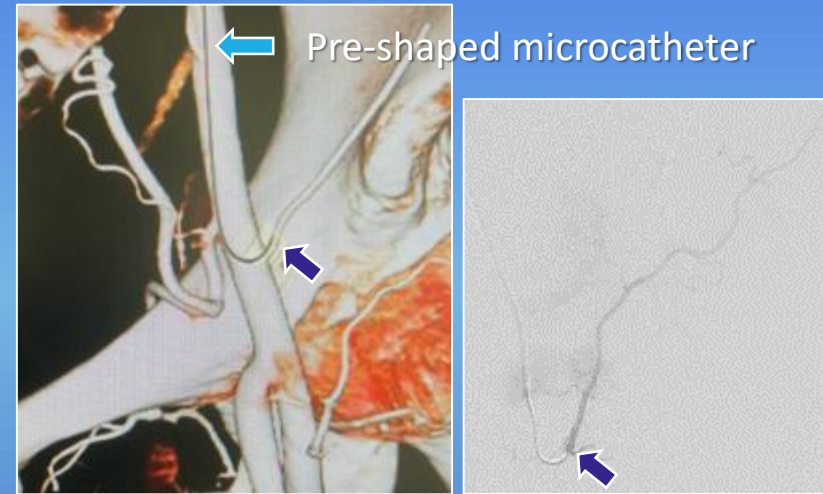
Selective microcatheter insertion without microguide wire.

# Procedural detail: Navigation to the branches of external iliac artery

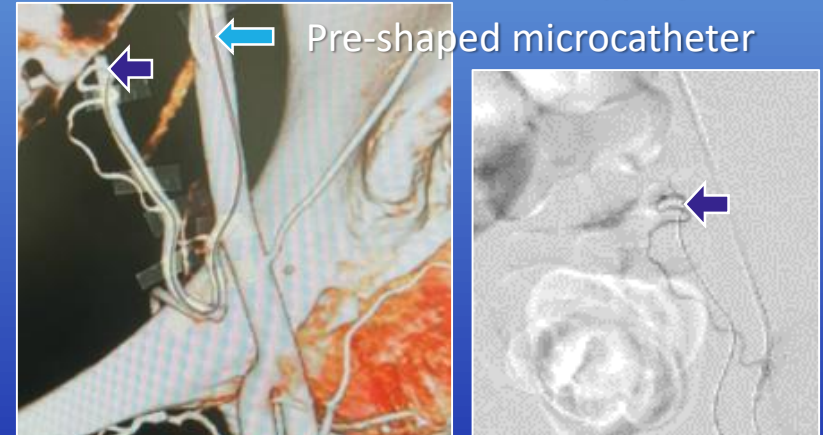
### Right femoral medial circumflex artery



### Left deep iliac circumflex artery



### Tumor branch from the left hypogastric artery

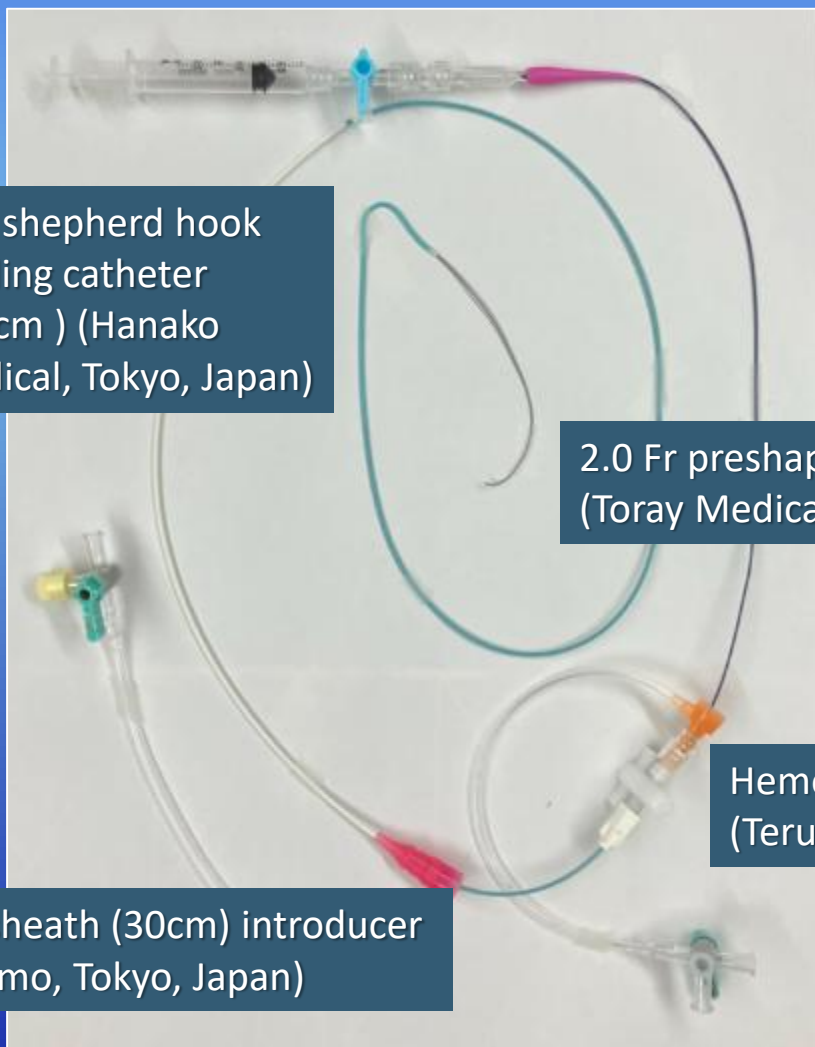


**Branches from external iliac arteries are also target vessels.**



## Conclusions

### Microcatheter assembly for pelvic intervention



4 Fr shepherd hook guiding catheter ( 70cm ) (Hanako medical, Tokyo, Japan)

2.0 Fr pre-shaped microcatheter (Toray Medical, Tokyo, Japan)

Hemostatic valve (Terumo, Tokyo, Japan)

4 Fr sheath (30cm) introducer (Terumo, Tokyo, Japan)

Pre-shaped microcatheter

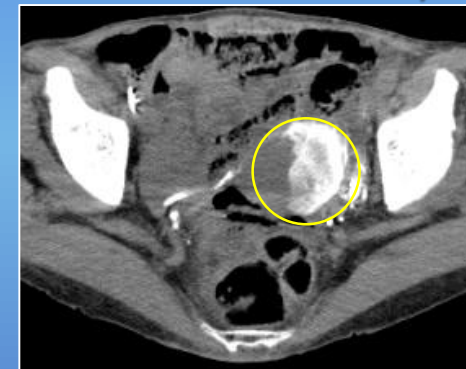
Video [Crick here](#)

### Uterine Cervical Carcinoma

Right uterine artery



Left uterine artery



### Conclusion

This technique using pre-shaped microcatheter and shepherd hook guiding catheter facilitates the selective angiography and saving procedure time, radiation exposure and medical costs.