

Mobile C-arm

System with Superior Image Quality and Operability Ideal for VAIVT*

Iwata Mates Clinic



Kyohei Hanamura
Radiological Technologist



Syuichi Matsuda
Director



Masami Kinoshita
Nurse

Located south of the Iwata train station in Iwata city, Shizuoka Prefecture, Iwata Mates Clinic specializes in dialysis. It offers enhanced dialysis treatment by providing comprehensive shunt management services using echo examinations and contrast radiography.

The shunt treatment room is equipped with a Shimadzu OPESCOPE ACTENO surgical X-ray fluoroscopy system that can be used for either contrast radiography of shunts or shunt percutaneous transluminal angioplasty (shunt PTA).

Therefore, we interviewed the clinic director, Syuichi Matsuda, and the staff about the current status of using the system for examinations and treatment.

Note: VAIVT (vascular access intervention therapy) is a percutaneous endovascular procedure used for inadequate blood flow through dialysis shunts.

—What is the current status of dialysis, shunt examinations, and treatment services at your clinic?

We have been performing 240 to 250 contrast radiography examinations of shunts each year for the last several years, with 239 performed during the last fiscal year.

Shunt PTA procedures are normally accomplished using either a stationary X-ray fluoroscopy system or angiography system.

However, at our clinic, we use an ACTENO system configured with an X-ray-transparent operating table and a height-adjustable patient bed oriented in a "T" arrangement, as shown in Fig. 2, and then have the patient lie down on the bed with their arm extended on the operating table at an orientation



Fig.2 Examination room

of 90 degrees from their body. Having the arm extended 90 degrees to the side makes it easier to observe lesions typically associated with shunts under the arm or clavicle.

This method is one of the unique features of how our clinic performs examinations and treatment.

—What background or key features (functionality or performance) resulted in choosing the ACTENO system?

We were using a Shimadzu system in the past, but when it was time to replace the system, we also compared systems from other major manufacturers.



Fig.1 Clinic exterior

However, after evaluating C-arm operability, compact instrument size, and other factors, we eventually decided on a Shimadzu ACTENO system. The new system offers much better image sharpness and brightness than the previous model, which helps ensure stress-free observation of guide wires. Furthermore, we operated the previous system for nine years without any problems, so we wanted to keep using a Shimadzu product.

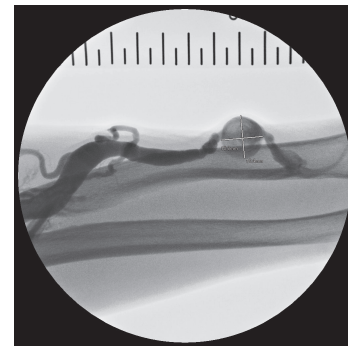


Fig.3 C-Arm can be moved quickly by manually moving it vertically or horizontally

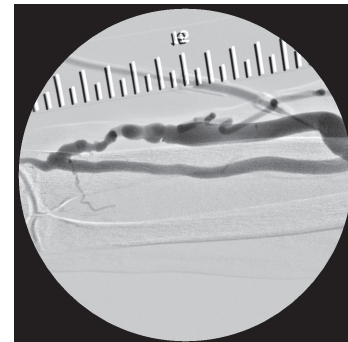
—What are your impressions of the functionality and performance?

One big advantage is the electromagnetic lock on the C-arm, which can be unlocked more quickly than the mechanical lever system. The motor-driven systems on competing products require holding down a button and waiting while the C-arm gradually ascends, but the ACTENO C-arm can be manually raised or lowered immediately.

It also allows adjusting the C-arm height while also moving it left or right. During shunt PTA procedures, the contrast medium flows very quickly, which requires positioning the C-arm very quickly, vertically and horizontally, as we track the flow. However, such positioning was only possible with the ACTENO. In addition, the virtual collimation function can be used to confirm the collimation area applied during fluoroscopy without actually having to perform fluoroscopy, which helps reduce exposure dose levels. Therefore, we use it every time we operate the system.



Shunt DA



Shunt DSA

Fig.4

—What do you think of the image quality for shunt PTA applications (fluoroscopy and radiography)?

Guide wires used for shunt PTA can be adequately observed with pulsed fluoroscopy at 15 fps, though it also depends on the type of guide wire.

In many cases, our clinic dilutes the contrast media used for DA and DSA images. However, the ACTENO system seems to provide more than adequate image quality, even when diluted by four times. Because using contrast media can stress the patient, we prefer a system that provides adequate visibility even with diluted contrast media.

—Do you have any comments for physicians considering introducing an ACTENO system?

The system is wonderful in terms of reducing the exposure dose and contrast medium quantity required, while also providing good visibility and accurate examinations. In terms of operability, the ability to manually move the C-arm up or down makes it ideal for dialysis facilities. The greatest proof of this fact is that another clinic in our group has also chosen to introduce the ACTENO.

—Thank you very much.