

Medical supportive device for hemodialysis catheter puncture

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Patient and medical supportive device for hemodialysis catheter puncture

Medical doctors at Okayama University Medical School and Shigei Medical Research Hospital in Okayama City, in collaboration with K.Techno Inc. develop a medical supportive device for hemodialysis

catheter puncture.

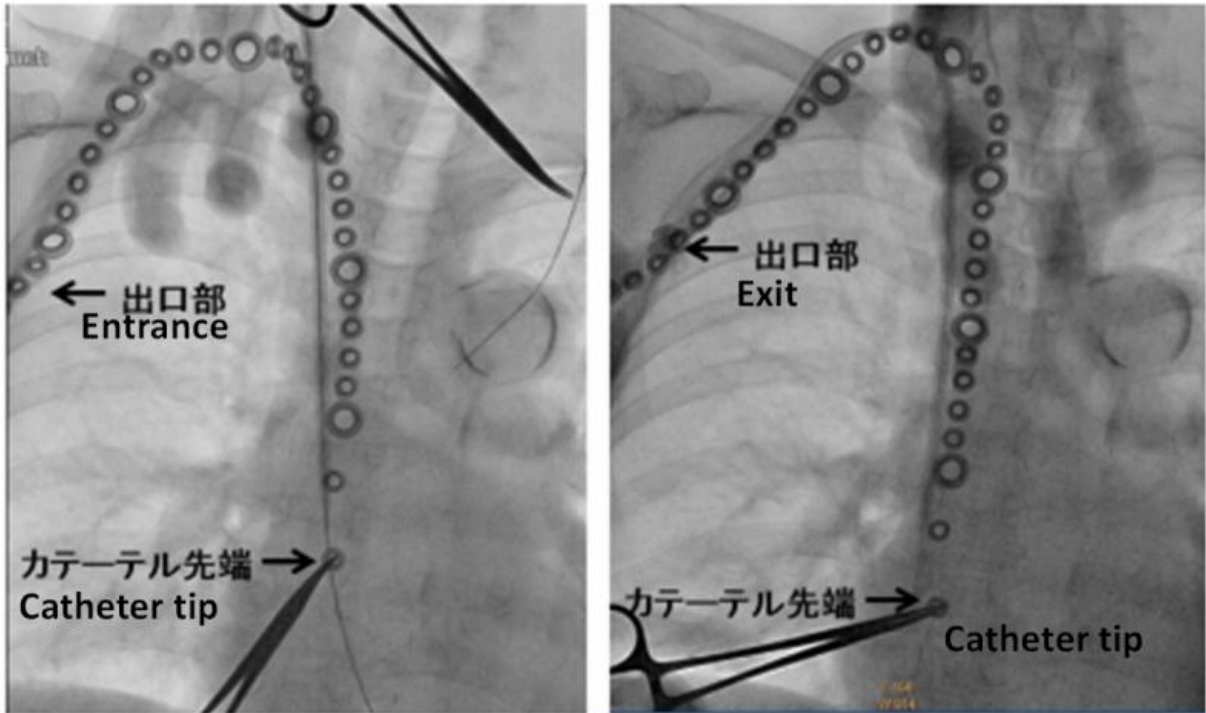
Hemodialysis is used to purify the blood of people with kidney failure with a growing need for dialysis using a [catheter](#) in countries with aging populations, such as Japan. The precise catheter placement for secure and efficient dialysis, requires specialized knowledge and skills of the doctor.

The implication of improper catheter placement include: the appropriate and correct hemodialysis cannot be carried out; the possibility of medical accidents; increase the exposure of patients to radiation through the use of X-ray equipment during replacement; and wastefulness in healthcare costs due to unnecessary disposal of expensive dialysis catheters.

Now, Dr Toshiaki Ohara at the Okayama University Medical School and clinical staff at the Shigei Medical Research Hospital in Okayama City, in collaboration with K.Techno Inc., have developed a "medical supportive [device](#) for hemodialysis catheter puncture" (hereafter 'device').

Clinical tests conducted at Shigei Medical Research Hospital showed no safety problems with excellent placement results of hemodialysis catheters.

The Okayama team will publish their results in an international journal and are preparing to commercialize this invention as well as looking for other non- hemodialysis catheter related applications of this technology.



X-ray images before (left) and after placement of catheter

Details of the process for using the 'device'

Before inserting the catheter the patient lies horizontally on an X-ray table followed by disinfection and sheets to define the operation area. Next, the 'device' is laid over the patient and a pen used to mark the path for the catheter. Then, a catheter of the appropriate length is selected and the internal jugular vein is punctured.

Then, in a state in which the wire and the dilator have been inserted, the device is used to make a line along the wire again. Then, actually superimpose the catheter to check that there is no deviation.

Then the exit section is set and the catheter is guided in a direction from

the outlet to the neck, and the inner cylinder of the dilator is removed. The catheter is inserted into the dilator and the process is completed when the dilator sheath is split and removed. This process enables the accurate and reproducible placement of catheters without deviation.

Provided by Okayama University

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