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Okayama University research: Medical supportive device for hemodialysis catheter puncture

(Okayama, 22 March 2016) **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.

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.

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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.

Medical supportive device for hemodialysis catheter puncture

Patient and medical supportive device for hemodialysis catheter puncture

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan
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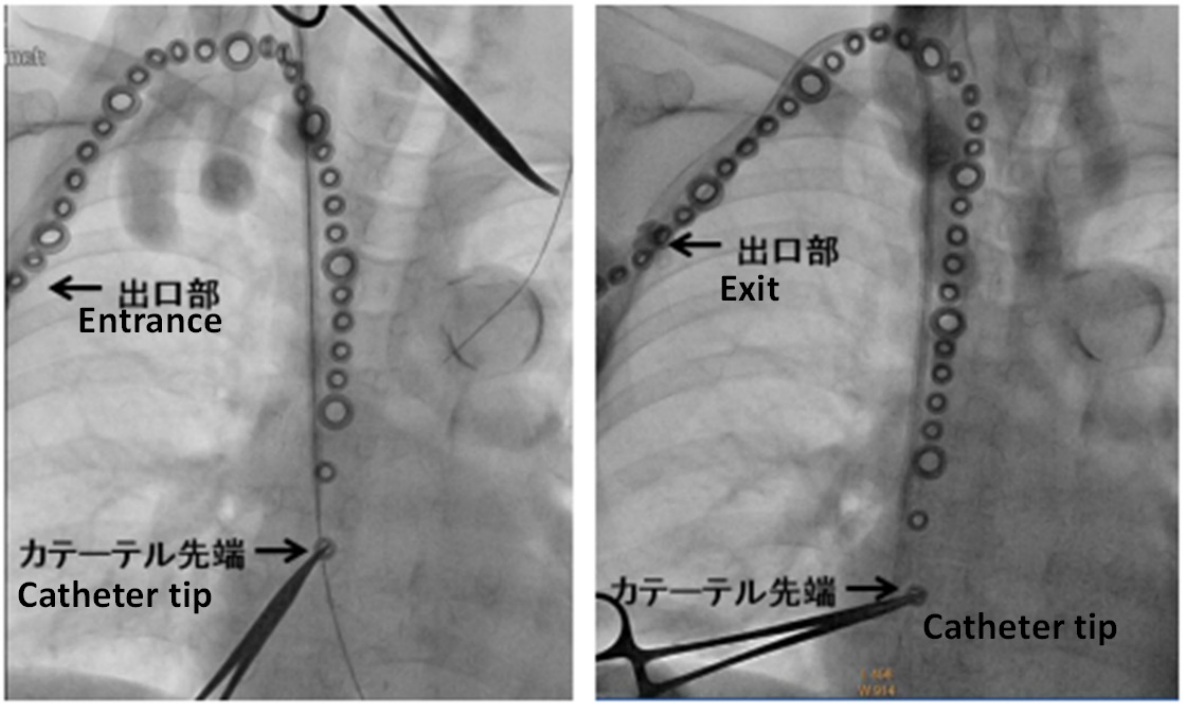

X-ray images before (left) and after placement of catheter

Correspondence to
Assistant Professor Toshiaki Ohara, M.D., Ph.D.
Department of Pathology & Experimental Medicine,
Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Shikata-cho 2-5-1, Okayama city, Okayama 700-8558, Japan
E-mail: t_ohara@cc.okayama-u.ac.jp

Assistant Professor
Toshiaki Ohara

Further information
Okayama University
1-1-1 Tsushima-naka , Kita-ku , Okayama 700-8530, Japan
Public Relations and Information Strategy
E-mail: www-adm@adm.okayama-u.ac.jp
Website: http://www.okayama-u.ac.jp/index_e.html
Okayama Univ. e-Bulletin: http://www.okayama-u.ac.jp/user/kouhou/ebulletin/
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About Okayama University

Okayama University is one of the largest comprehensive universities in Japan with roots going back to the Medical Training Place sponsored by the Lord of Okayama and established in 1870. Now with 1,300 faculty and 14,000 students, the University offers courses in specialties ranging from medicine and pharmacy to humanities and physical sciences.
Okayama University is located in the heart of Japan approximately 3 hours west of Tokyo by Shinkansen.

OKAYAMA University
1-1-1 Tsushima-naka, Kita-ku, Okayama 700-8530 Japan
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