**中文題目：**血液透析雙槍靜脈導管之一併發症

**英文題目：**A complication of double lumen hemocatheter guide-wire entrapment in a hemodialysis patient

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**摘　　要：**

**Introduction**

Double lumen hemocatheter is commonly used for temporarily hemodialysis patient. Various complications such as infection, thrombosis, cardiac arrythmia and perforation have been documented. However, there are few reports of guide wire related complications. We report a complication of double lumen hemocatheter guide-wire entrapment in a hemodialysis patient.

**Case Report**

A 43 year-old female of type 1 diabetes mellitus and end stage renal disease, who has received regular hemodialysis, was admitted for left arteriovenous shunt dysfunction and new arteriovenous fistula creation. Insertion of temporarily double lumen hemocatheter on her right internal jugular vein went smoothly. However, hemocatheter chamber clotting was found while hemodialysis, so a new hemocatheter was changed over guidewire. Following aseptic condictions and confirming good backflow of blood on aspiration, the guide wire was introduced without any resistance. The clotting hemocatheter was removed and a new catheter was inserted. During the procedure, the J-tipped guide wire could not be withdrawn. The entrapped guide wire could not be encountered even removing the hemocatheter. Cardiac arrhythmia with frequent ventricle premature contraction was found while gentle manipulation of the guide wire and it seemed to be stuck. Immediate portable chest radiography revealed the J- tip of the guide wire in the right ventricle near the region of tricuspid valve. (Fig 1) Under cardiac sonograph, the guide wire is still unable to draw out of right ventricle, so fluoroscopy was arranged. Snare catheter kit was inserted through the 10 Fr sheath. Fluoroscopic image confirmed the J-tip was lying in the ventricle near the tricuspid valve where it stucked and difficult to remove. (Fig 2) The cardiologist untied the knot by endovascular snare under fluoroscopy. A new double lumen hemocatheter was inserted in left internal jugular vein after remove the guide wire and sheath.

**Discussion**

Hemocatheter related complications are well known, but there few complications declared in guide wire insertion. The most common complication of guide wire is the induction of cardiac arrhythmia*. Other complications include entrapment of guide wire in inferior vena cava filters* or sternocleidomastoid muscles*. In our patient, the guide wire was inserted more than the

recommended distance as there was no distance marking on the guide wire. Previous study suggested that the upper limit of 18 cm as appropriate for most adults from right internal jugular vein entry point to caval atrial junction as the guide wire distance during central venous catheter placement*. Introducing guide wire length > 18cm would increase the likelihood of reaching into the atrium and tricuspid valve. This report emphasizes the importance of awareness ontial guide wire entrapment during inserting double lumen hemocatheter. The physician should recognize not only the safe placement of hemocatheter but also provide guide wire with specific length appropriately and avoid excessive wire insertion. If the guide wire can’t be passed easily without resistance, procedure should be stopped and we also should be aware of possibility of guide wire entrapment in the chordae tendineae of the tricuspid valve. We performed a successful guide extraction with endovascular snare without major surgical intervention. When a guide wire became hard to withdraw and unexpected resistance is encountered, we should never withdraw a guide wire violently and blindly and extracting a guide wire with minimal invasive approach with fluoroscopy guide and snare catheter intervention is a preferable method.