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Pull Back Venographic and Gross Findings of Tunneled Cuffed Catheter Removed or Exchanged in Hemodialysis Patients

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Purpose : As growing of hemodialysis (HD) patients, use of tunneled cuffed catheter (TCC) is increasing. But there is few data about natural history of TCC removed or exchanged in HD patients. The purpose of this study is to evaluate pull back venographic and gross findings of removed or exchanged TCC in HD patients

Methods : Ninety-one TCCs for HD were removed or exchanged between March 2009 and March 2010 in Uijeongbu St. Mary's Hospital. Pull back venography was performed with imaging over the chest. Patients demographics, catheter location, and dwell time were recorded. Removed or exchanged TCCs were cut at 1 & 2 cm from the tip and intra-catheter fibrin and thrombi were grossly investigated. In cases of venous or intra-cardiac thrombi in venography, we performed chest computed tomography (CT).

Results : This study included 91 patients (49 males and 42 females) with median age 57.1±13.4 yrs (19-80 yrs) and incidence of diabetes was 68.5% (63 patients). All TCCs was inserted by fluoroscopic guided procedure. The insertion site consisted of the internal jugular vein (83.5%) and external jugular vein (16.5%). Mean dwell time was 88.2±63.7 days (4-282 days). Pull back venography showed fibrin sheaths (33.7%), thrombi (11.0%), and central vein stenosis (4.4%). We performed chest CT in 7 patients with evidence of venous thrombi in venography. Five patients showed consistent findings with venography. Of the total 91 patients, 50.5% had intra-catheter fibrin and thrombi.

Conclusion : In this study, high incidence of fibrin sheaths and thrombi was observed in both intravascular and intra-catheter lumen. Therefore, we suggest that adequate management of dwelling TCCs in HD patients is important to prevent these catheter complications.

Key Words : Pull back venography, Tunneled cuffed catheter, Hemodialysis