



Shaping Tomorrow's Nephrology: Insight-Driven Kidney Care

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Preventing Dialysis Access Thrombosis Caused By Limb Restraint In Hemodialysis Patients With Forearm Arteriovenous Access

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Case Study : Hemodialysis patients with forearm arteriovenous access are frequently admitted to intensive care units (ICU) because of critical illness, where limb restraint may become unavoidable due to agitation or delirium. Commercially available glove or mitt restraints typically include a wrist strap that may exert external compression on the anastomotic site of radiocephalic fistulas or the apex of forearm loop grafts. Such compression can reduce access blood flow and precipitate thrombosis or occlusion, resulting in loss of access. Although this complication is occasionally encountered in clinical practice, it remains underrecognized and practical preventive strategies have rarely been reported. To minimize compression of the wrist and forearm, we introduced a modified restraint technique using elastic bandage instead of conventional glove restraints. The patient's hand was gently clenched around a roll of 4-inch elastic bandage and the entire fist was wrapped with another elastic bandage. The bandage held within the fist was then passed through the wrapped bandage and secured to the bed rail, allowing restraint while avoiding compression of the wrist and forearm. Adhesive tape was applied to prevent loosening of the wrapped bandage. We retrospectively compared the incidence of arteriovenous access thrombosis in hemodialysis patients with radiocephalic fistulas or forearm loop grafts who required limb restraint during ICU admission during the six months before and after implementation of this method. During the six months before implementation, five cases of access thrombosis occurred among twelve restrained patients, including two radiocephalic fistulas and three forearm loop grafts. During the six months after implementation, only one case of graft thrombosis occurred among eight restrained patients, and this case was associated with septic shock related hypotension without evidence of external compression. These findings suggest that a elastic bandage-based restraint technique may help prevent restraint related arteriovenous access thrombosis by avoiding external compression of forearm arteriovenous access.

Glove restraint.jpg



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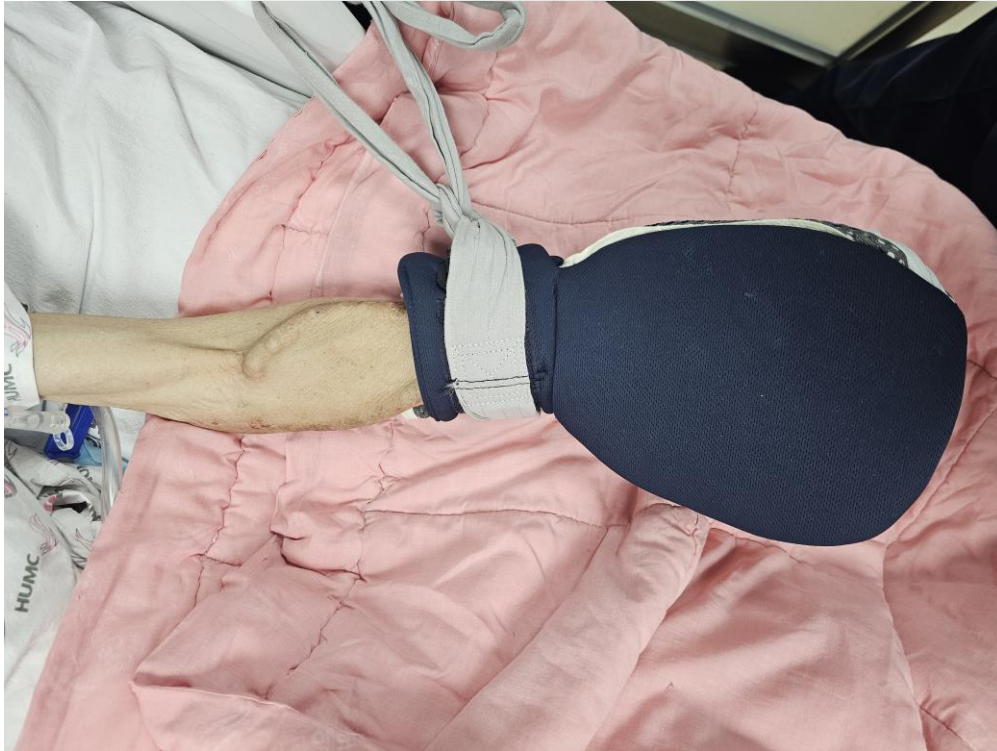
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