

## Limb-Threatening Peripheral Venous Catheter-Associated Phlebitis: A Complication Not To Be Taken Lightly

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### INTRODUCTION:

Peripheral venous catheters (PVC) are the most commonly used medical device in the hospital. PVC insertion is often considered as a low risk procedure. Nevertheless, PVC insertion can be associated with significant adverse events. We present 2 cases of limb-threatening PVC-associated infective phlebitis which had progressed to necrotizing fasciitis.

### CASE REPORTS:

Mdm H, a 48-year-old lady with underlying diabetes mellitus, was admitted to the medical ward for diabetic ketoacidosis and iron deficiency anemia for 1 week. She was given intravenous iron sucrose infusion and other intravenous medications through a PVC inserted into her left cephalic vein at the wrist. One day prior to discharge, she complained of pain and mild swelling at her PVC insertion site. One week after being discharged from the hospital, she was diagnosed to have necrotizing fasciitis at the left hand, requiring extensive wound debridement. Culture of the pus revealed colonies of multidrug-resistant *Klebsiella pneumoniae*. Subsequently, the infection worsened and an above-elbow amputation had to be performed to control the infection. Intravenous ertapenem was given to eradicate the infection.



Figure A (from left to right) shows mildly swollen left hand during the initial hospital admission. She presented again with worsening left hand swelling complicated by necrotizing fasciitis, requiring extensive debridement and finally above-elbow amputation.

Mdm S, a 27-year-old lady with underlying epilepsy, was admitted to the medical ward for status epilepticus. She received intravenous

medications through a PVC inserted into her right foot dorsal venous arch. However, the catheter insertion site was infected, progressing fast into necrotizing fasciitis affecting the right foot and ankle. An extensive wound debridement was done, followed by split skin grafting after the infection settled. Multidrug-resistant *Klebsiella pneumoniae* was cultured from the tissue samples taken intra-operatively. She was given 2 weeks of intravenous meropenem for bacteria eradication.



Figure B (from left to right): The patient developed local infection at the PVC insertion site which had progressed into necrotizing fasciitis, requiring extensive wound debridement.

### DISCUSSIONS:

Peripheral venous catheters are associated with adverse effects such as phlebitis (20.1/100 PVC), hematoma (17.7/100 PVC) and liquid/blood escape (13.1/100 PVC). Although uncommon, infections can lead to significant morbidity if no proper care is given.

Infections can be divided into blood stream infections and local tissue infections. Both of the patients develop catastrophic local tissue infections of the upper and lower limbs respectively. The cultures of multidrug-resistant *Klebsiella pneumoniae* sensitive only to carbapenems suggest that these are hospital-acquired infections.

### CONCLUSION:

Peripheral venous catheter insertion is a common procedure at the hospital. Extra care must be taken to prevent catastrophic adverse events such as limb-threatening infection.