

A Rare Event of Broken Intravenous Cannula in Dorsal Metacarpal Vein in a Three-month-old Infant

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ABSTRACT

Background: Breaking of intravenous cannula during its removal and its proximal broken part getting retained in the vein; is a rare occurrence, but has been reported. Such cases in pediatric population has been rarely reported. We are reporting such a case of broken intravenous cannula in dorsal metacarpal vein in a 3-month-old infant.

Case Description: A 3-month-old male child reported to our plastic surgery OPD as a referral case from Pediatrics department. He was brought to our OPD with the history of peripheral venous cannula insertion in left dorsum of hand during hospital stay. On palpation, a cordlike structure with firm consistency was found over dorsum of left hand. CECT showing iv cannula in dorsal metacarpal vein between 4th and 5th metacarpal of left hand. Dorsal metacarpal vein was made free from the surrounding structures. Gentle retrieval of iv cannula was done after laying open the vein.

Discussion: Breaking of iv cannula is a rarely reported event, and its risks can be reduced by avoiding repeated cannulation with the same device, avoiding lower extremity iv line, preventing excessive cannula movement and removing the peripheral iv catheter as soon as possible.

Conclusion: Emergent exploration after localization should be the ideal management.

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INTRODUCTION

Reported incidents of foreign bodies in veins are rare in adults; rarer in pediatric population. Placement of intravenous cannula is mostly the first procedure performed on indoor patients in hospitals. Breaking of iv cannula during its removal and its proximal broken part getting retained in the vein; is a rare occurrence but has been reported. Migration of the broken part proximally, venous thrombophlebitis,

venous hematoma, venous spasm, air embolism, infection & injury of the surrounding structures have been reported as complications.¹ Such cases in pediatric population have been rarely reported. We are reporting a case of broken intravenous cannula in dorsal metacarpal vein in a 3-month-old infant.

CASE DESCRIPTION

A 3-month-old male child reported to our plastic surgery OPD as a referral case from Pediatrics department. Patient was admitted in Pediatrics department for the management of Severe Acute Malnutrition. He was brought to our OPD with the history of peripheral venous cannula insertion in left dorsum of hand during hospital stay and breaking of the cannula while removal and left inside the vein. On palpation, a cordlike structure with firm consistency was found over dorsum of left hand. CECT showing iv cannula in dorsal metacarpal vein between 4th and 5th metacarpals of left hand (Figure 1).

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Figure 1: CECT hand showing the fractured iv cannula.

Pre-anesthetic checkup done and removal of the foreign body was planned for surgery under general anesthesia. Longitudinal incision given over the space between 4th and 5th metacarpals over the dorsum of left hand. Dorsal metacarpal vein was made free from the surrounding structures. Gentle retrieval of iv cannula was done after laying open the vein (Figures 2 & 3). Hemostasis done and skin was closed using non-absorbable sutures. Uneventful post-operative period. Stitches removed on day 10. Patient was kept under regular follow-up.

DISCUSSION

Cannulation in peripheral veins is usually considered a safe procedure. Reports related to fracture of the cannula intravenously are usually related to catheterization of central veins.¹ Turner *et al.*, had reported the first case of intravascular embolization



Figure 2: Isolation of the dorsal metacarpal vein.



Figure 3: Retrieval of the broken cannula segment after venotomy.



Figure 4: Retrieved segment of fractured cannula (~1.5 cm).

of catheter fragment in 1954, as a complication of central venous catheterization.² He also reported migration of the broken iv cannula segment proximally.

In our case, there was no migration of fractured proximal segment. It was managed as an emergency condition. Breaking of iv cannula is a rarely reported event and its risks can be reduced by avoiding

repeated cannulation with the same device, avoiding lower extremity iv line, preventing excessive cannula movements and removing the peripheral iv catheter as soon as it is not required.¹ Surgical retrieval of iv foreign body should be performed under anesthesia, careful venous dissection, isolation and separation of vein, laying open of vein and retrieval of the foreign body. CT guided retrieval of foreign bodies have also been reported.³

Interventional radiology, a minimal invasive method of intravascular foreign body retrieval is a safe option; but its use is restricted due to high cost and unavailability at most of the centers.⁴

CONCLUSION

Peripheral intravenous cannula fracture is a complication of a common procedure. For removal of the broken segment; imaging techniques as essential to ensure, its complete retrieval. Emergent exploration after localization should be the ideal management.

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