

## Extravasation of Contrast Medium (Omnipaque) resulting in Compartment Syndrome.

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**Abstract:** A case of acute compartment syndrome of the upper extremity, resulting directly from the extravasation of Contrast medium (omnipaque), that presented as upper extremity ischemia, is described. Timely surgical interventions like multiple fasciotomies on the dorsal aspect of hand resulted in an excellent outcome. All patients with upper extremity extravasation should be evaluated to rule out compartment syndrome, despite the absence of typical signs and symptoms in the post injection phase on an hourly basis.

**Keywords:** Contrast medium (omnipaque), Extravasation, Compartment syndrome.

### INTRODUCTION

Omnipaque a non-ionic, low osmolar contrast medium is relatively non absorbable, water soluble and of low viscosity which permits uniform distribution. It has a broad range of intravascular diagnostic procedures such as coronary angiography, spinal cord imaging, and body cavity procedures. Extravasation of contrast medium (omnipaque) leading to compartment syndrome is a rare complication. Although soft tissue infiltration of intravenous contrast occurs with an estimated frequency of 0.7%. Signs and symptoms of compartment syndrome are well known as pain, pallor, paraesthesia, and pulselessness. However it is commonly believed that these are late signs and are often not present until irreversible tissue damage has occurred.

### CASE REPORT

A 74 year old male reported to our hospital with complaint of severe pain and swelling of left hand and forearm. Patient is a known case of diabetes mellitus and ischaemic heart disease with biliary lithiasis. He has undergone stenting of left coronary artery 9 months ago and stenting of common bile duct 2 weeks ago. He was referred for a CT scan of biliary system with contrast where they had used his left hand for venous access. On the same side he had infusions when he was hospitalized elsewhere for biliary stenting. The centre where CT scan was done used omnipaque contrast medium. While injecting the dye, the contrast escaped into the subcutaneous plane under pressure and patient developed severe pain and swelling on his left hand and forearm. As a measure to reduce 8 hours later patient reported saying that he has unbearable pain and complete absence of movements of all fingers of left hand. As a measure to reduce the swelling ultra sonic therapy was given with intensity 0.5 w/2cm and duration 5 minutes on palmar and dorsal aspect of left hand. During therapy it was noted that multiple vesicles developed over the dorsum of the hand. On examination it was found that swelling had spread into forearm space and radial pulsation were feeble compared to the right side. In order to reduce the swelling the vesicles were deroofed under aseptic conditions and multiple dorsal incisions were made

deep to the deep fascia. About 10 ml of serous fluid escaped. Patient was started on antibiotics and pain relief measures. The arm was kept in elevated position. Within next 8 hours he got back free movements of all fingers and full volume radial pulse.

### DISCUSSION

Ultrasonic therapy is found to be effective in chronic lymphoedema in mobilizing the dense indurated tissues. Hence we applied the same philosophy in acute phase of compartment syndrome. Even though it is contraindicated in acute inflammatory conditions like cellulites and other infectious conditions. To our surprise the ultrasound has produced a different effect by mobilizing the fluid from the dermal compartment to the sub dermal compartment which is manifested as vesicles. This change we noticed while treatment was given for 5 minutes, with intensity 0.5 w/2cm on the dorsum of the left hand and forearm. So we feel that ultrasonic therapy has no role to play in non infectious compartment syndrome.

### CONCLUSION

The ultrasonic therapy is a form of therapy used for treating chronic edema contrary to the expectation it resulted in the production of vesicles on the skin and compromised vascularity of the forearm. It is abundantly clear that this form of therapy is an absolute contraindication in acute situation. So it should not be used as a therapeutic modality in treating acute compartment syndrome.

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