

IV CONTRAST EXTRAVASATION

GENERAL COMMENTS

- Approximately 0.1-1.2% of CT injections and 0.05% of MRI injections result in extravasations.
- Extravasation injuries after injection of gadolinium contrast are much less common than with CT contrast due to the smaller volumes of contrast administered and the lower toxicity of gadolinium contrast.
- Most patients with extravasations complain of initial swelling or tightness and/or stinging or burning pain at the site of extravasation, however some experience little or no discomfort.
- In most patients, initial swelling and tenderness resolves within hours to days after the extravasation. The vast majority of patients in whom extravasations occur recover without clinically important sequelae. Only rarely will contrast extravasation injury proceed to a severe adverse event.
- Patients at risk for contrast extravasation include patients who are uncommunicative; are injected in the hand, foot or ankle; have altered circulation in the injected extremity (PAD, diabetic vascular disease or venous thrombosis/insufficiency) or have a history of extensive surgery (node dissection or vein harvesting) or radiation therapy in the injected extremity.
- Steps to minimize contrast extravasation include confirming intravenous location by aspirating blood through the IV catheter and flushing the IV catheter with a saline test injection, performing meticulous IV catheter insertion technique, using angiocatheters rather than butterfly needles and carefully securing the IV catheter.
- Contrast can only be power-injected via PICCs, Quinton catheters, TICC's and chest ports if these catheters have been certified for power injection and they are injected within the flow-rate limit provided. All manufacturer recommendations should be followed.

EVALUATION AND TREATMENT OF IV CONTRAST EXTRAVASATION

- The technologist will alert a radiologist to the contrast extravasation event.
- The contrast extravasation event should be documented on the technologist's worksheet and in the radiologist's dictation.
- A health care provider should examine the patient. Physical examination should include assessment of tenderness, swelling, erythema, paresthesia, active and passive range of finger motion and tissue perfusion / capillary refill.
- There is no known effective treatment for contrast medium extravasation, although initial steps should include elevation of the affected extremity above the level of the heart and intermittent use of cold or warm compresses.
- Surgical consultation should be obtained whenever there is concern for a severe extravasation injury. Signs and symptoms of severe injury include severe pain; progressive swelling or

pain; decreased tissue perfusion / capillary refill; change in sensation; worsening active or passive range of motion in the elbow, wrist or fingers or skin ulceration/blistering.

- For inpatients, the patient's nurse and/or ordering provider should be advised of the event and instructed to assess the patient frequently for any of the above signs and symptoms.
- Since severe extravasation injuries can develop slowly (up to hours after an extravasation), all discharged outpatients and ER patients should be given clear instructions concerning when and where to seek additional medical care (including for worsening pain, development of paresthesia, diminished range of motion, and new skin ulceration or blistering).
- The patient can be reinjected with contrast provided a new IV line is started, the line is located in another extremity and the line flushes freely and without patient discomfort.