

Management of Extravasation of CT and MRI contrast agents

Introduction

Intravenous contrast agents are used routinely during CT and MRI scans to enhance vascular structures and organs to better visualise anatomy and pathology. This is administered by hand or pump injection through a cannula. (A hand injection administers up to 50ml and the pump injector usually between 100-150ml up to 5ml/sec.). Either method runs a small risk of extravasation.

Definition

Extravasation is the unintentional leakage of vesicant drugs into surrounding tissue, which can lead to necrosis. Vesicant drugs are agents which can cause tissue damage by blistering or necrosis not just inflammation. This can occur either by a cannula piercing the vessel wall on insertion or increased venous pressure by injection that causes leakage around the original venepuncture site.

Purpose

This policy is to identify risk factors prior to, and key action points in the event of a patient extravasation. It aims to standardise the management of extravasation across the CT/MRI department where contrast media is administered, keeping patient care and safety at the forefront of its purpose.

Risk Factors

- Patients with small peripheral veins
- Patients who have had multiple IV access attempts
- Patients with a cannulation warning on CRIS
- Cannulating non communicative patients-children, unconscious, non-English speaking
- Patients with Learning difficulties
- Patient with an abnormality to a limb
- Patients needing faster injection rates

Signs and Symptoms (one or more confirms extravasation)

- Patient will complain of pain, burning and stinging at the venepuncture injection site.
- There will be swelling or leaking at the injection site.
- Erythema or skin redness.
- Inability or difficulty to draw blood from cannula.
- A high pressure is indicated by the injector pump or by resistance in the syringe.

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Management of Extravasation

1. **Halt any injection immediately**
2. Notify your team
3. Tend to the patient to assess the situation, signs and symptoms.
4. Elevate the patient's affected arm and gently massage the area to aspirate as much of the drug out as possible.
5. Apply a cold compress to the site.
6. If the patient is feeling well enough, sit them in a bay keeping the cold compress on site and arm elevated.
7. Notify Radiologist to assess extravasation severity. In severe cases the Radiologist will escalate patient to the clinical team.
8. Once the symptoms begin to show signs of relief the patient may leave the department with a completed patient aftercare leaflet (Appendix A).
 - All ward patients should return to the ward immediately. The ward must be notified of the time and volume of extravasation, type of agent extravasated. They should remain with their arm elevated and cold compress applied until signs of relief appear.
9. If any of the following symptoms occur outpatients are encouraged to seek advice from their GP or Emergency department out of hours:
 - The pain becomes more severe and is not controlled by simple painkillers
 - There is progressive swelling of the arm or hand
 - The arm or hand changes in colour
 - There are pins and needles or altered sensation in the arm or hand
 - There is blistering or ulceration of the skin around the injection site.
10. Document via Datix and CRIS comment.

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Appendix A

Contrast injection leak guidance (extravasation)

This leaflet contains further information on what you should do if the contrast injection that you were given for your MRI or CT scan has leaked out under your skin (extravasation).

What is extravasation?

Contrast agents are usually given to patients having an MRI or CT scan by injection into a vein in your arm or hand. Occasionally the injection may leak out from the vein to the tissues under the skin – this is known as extravasation. If this has happened, you will experience a stinging sensation where the contrast has gone into the tissue and it can be painful. This will usually wear off after about 30 minutes. You may also have some swelling of the arm or hand – please read the paragraph below on what to do if this happens.

Sometimes you may need another injection of contrast and if necessary, this will be discussed with you.

What will happen if there has been a leak?

The radiographer will massage and elevate your arm as soon as the leak happens. A cold compress will be applied to the area if required and, if possible, we will then continue with the scan.

If the extravasation is severe, a doctor will examine you before you leave the department and advise you if any further treatment is necessary.

Is there anything I can do at home?

Massage the area where the contrast has gone into the tissue.

If there is swelling:

- Elevate the affected arm as much as possible. At night, keep it elevated on two pillows (you should continue to do this until the swelling has gone down.)
- Use an ice-pack or a bag of frozen vegetables wrapped in a clean tea towel over the site. Never place ice directly on skin as it may cause frostbite, and do not leave it on for more than 15 minutes at a time.
- If the area is painful, take your usual painkillers.

Is there anything I need to look out for?

In most cases this is a minor injury and does not require any treatment. However, in a small number of cases the injury is more severe and you will need to seek medical attention from your GP or your nearest Emergency Department (A&E).

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Important

If you experience any of the following symptoms, you should seek advice from your GP or attend your nearest Emergency Department (A&E) and take this leaflet with you:

- The pain becomes more severe and is not controlled by simple painkillers
- There is progressive swelling of the arm or hand
- The arm or hand changes in colour
- There are pins and needles or altered sensation in the arm or hand
- There is blistering or ulceration of the skin around the injection site.

To be completed by the MRI or CT Radiographer:

Contrast agent	Date and time	Amount of contrast extravasated	Amount of saline extravasated	Site of extravasation

Contact us

If you have any questions or concerns about your CT or MRI scan with contrast, please contact the MRI Department on t: 01722 336262 extension 2010 (Monday to Friday, 9am to 5pm).

Outside these hours, please contact your GP or go to your local Emergency Department (A&E) for advice.

Your comments and concerns

For advice, support or to raise a concern, contact our Patient Advice and Liaison Service (PALS).

Tel: 01722 429044 (PALS) Email: sft.pals@nhs.net

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