

Peripheral I.V. Infiltrations

National Night Float Curriculum

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Learning Objectives

- State the difference between an infiltration and an extravasation
- Use the INS classification score to accurately stage an iv infiltration
- List the appropriate steps in management of an iv infiltration

Case 1: Night Intern

- The nurse for a 2 year old girl with pneumonia pages you to report that the iv stopped working during the Ceftriaxone infusion, and she suspects it has infiltrated.
- You head to the bedside to evaluate the situation.

Case 1: Questions

- How can you tell if the iv has infiltrated or not?
- Does it matter which fluid was infusing at the time of infiltration?
- Is it necessary to replace the iv tonight?

Case 2: Senior Resident

- You are covering the Oncology service, and you get a text page from your intern, that reads:
“Patient X’s iv infiltrated and her hand is really red and swollen, not sure what to do!”

Case 2: Questions

- ❑ What possible complications are running through your mind as you rush to the bedside?
- ❑ Which complication would prompt you to page the attending on call?

Infiltrations and Extravasations

- Infiltration = leak of fluid into extravascular tissue
- Extravasation = infiltration of a vesicant
- Vesicant = agent that causes blistering and/or tissue damage
- Irritant = agent that triggers histamine release
 - Associated with increased risk of phlebitis

Infiltrations and Extravasations

- ❑ Common vesicants: diazepam, dopamine, vincristine, calcium chloride, higher concentrations of glucose and potassium, vasopressors
- ❑ Common irritants: nafcillin, clindamycin, cefotaxime, amphotericin B
- ❑ Always refer to your local institution formulary to determine if the infusion is a vesicant or an irritant

Infiltrations and Extravasations

□ Prevention

- Avoid iv catheter placement in joint sites and other high-risk sites for kinking and dislodgement, particularly for vesicant administration
- Secure iv catheter with *transparent* tape to enable proper site assessment
- Do not secure tape too tightly, as constriction can impede venous blood flow and increase susceptibility to vein wall rupture
- Assess iv catheter site frequently

INS Infiltration Scale

Stage

Clinical Criteria

0

- No symptoms
-

1

- Skin blanched
- Cool to touch
- Edema < 2.5cm
- +/- pain

2

- Skin blanched
- Cool to touch
- Edema 2.5cm – 15 cm
- +/- pain

3

- Skin blanched, translucent
- Cool to touch
- Edema > 6 inches
- Mild to moderate pain
- Possible numbness

4

- Skin blanched, translucent, tight, leaking, discolored, bruised
- Edema > 6 inches
- Deep pitted tissue edema
- Impaired circulation
- Moderate to severe pain
- Infiltration of **any** blood product, irritant or vesicant

Infiltrations



This child's antibiotic infiltrate went untreated for a few days.

Infiltrations



This child's IV site was completely wrapped, preventing proper assessment

Infiltrations



The tape was fastened too tightly around this child's extremity.

Management

- ❑ Stop the infusion
- ❑ Disconnect the iv tubing, attach a syringe and aspirate any residual drug from the site
- ❑ Determine if infusate is a vesicant or irritant
- ❑ Remove the iv if it is *not* a vesicant
- ❑ Leave the iv in situ if it is a vesicant
- ❑ Describe the site using the INS classification scale
- ❑ Elevate the affected extremity
- ❑ Apply a cool pack
- ❑ Reassess the site frequently to monitor for progression to Stage 3 or 4

Management

- If the infusate is a vesicant and/or the site is Stage 3 or 4
 - Notify the attending on call
 - Refer to unit or pharmacy protocol for that specific vesicant regarding antidote administration
 - If antidote is *not* indicated, or if infusate is *not* a vesicant, remove the iv
 - Consult Plastic Surgery for assistance with local wound care

Management

□ Antidotes

■ Hyaluronidase

- Administered as subcutaneous injections
- FDA approved for vincristine and vinblastine extravasations

■ Dexrazoxane

- Administered via iv, given via the same iv that has infiltrated
- FDA approved for anthracycline extravasations

Summary

- ❑ Always consult your institution's formulary to determine if an agent is a vesicant or irritant
- ❑ INS Infiltration Scale guides management
- ❑ Stage 3 and 4 extravasations should always prompt a call the attending and Plastic Surgery consultation
- ❑ Hyaluronidase and Dexrazoxane are FDA approved antidotes for certain vesicants

References

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