

## Chemotherapy Extravasation From Implanted Ports

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**Purpose/Objectives:** To describe the four primary causes of extravasation from implanted ports.

**Data Sources:** Journal articles, textbooks, medical records, depositions, serial photographs, and the authors' personal experiences.

**Data Synthesis:** Extravasation from ports can occur by four major mechanisms: incomplete needle placement and needle dislodgment, thrombus or fibrin sheath formation, perforation of the superior vena cava, and catheter fracture. The degree of tissue injury can vary but may be severe enough to require that a simple mastectomy be performed to manage chest wall necrosis.

**Conclusions:** Extravasation is a known risk of chemotherapy administration via implanted ports. Vesicants should be administered only after a blood return has been obtained and the needle inserted into the port septum has been adequately secured.

**Implications for Nursing Practice:** Extravasation of vesicant drugs from ports can cause tissue necrosis and may prompt litigation. Risk-management strategies include careful assessment and use of ports, comprehensive patient teaching about the risk of extravasation and measures to decrease the likelihood of needle dislodgment, and development of extravasation-management policies that address port extravasations.

### Objectives for CE Enrollees

On completion of this CE, the participant will be able to

1. Describe the four major mechanisms for extravasations from implanted ports.
2. List implications for nursing practice.

Implanted venous access ports are widely used to deliver a variety of chemotherapy regimens and supportive therapies and frequently are implanted in individuals with limited or exhausted peripheral venous access. The two locations most often used for port place-

### Key Points . . .

- Any extravasation of a vesicant drug from an implanted port can be particularly problematic because of the depth of the extravasation and the potential slower development of demonstrable signs.
- Extravasations can be the result of faulty equipment, human error, system problems, or some combination of the three.
- Patients need to understand about the possibility of this serious problem occurring and that pain or burning on injection of chemotherapy is not normal and should be reported immediately.

ment are the infraclavicular area on the anterior chest wall and the forearm. D'Angelo et al. (1997) also reported implanting ports using a great saphenous vein cutdown approach to access the inferior vena cava, with the port septum placed in the abdominal region.

To access a port, a noncoring needle or special over-the-needle catheter is inserted through the skin into the silicone septum of the port. The needle must be long enough to ensure placement inside the port reservoir. Determination of needle length is based on the depth of the port and the amount of subcutaneous tissue and fat overlying the port (Camp-Sorrell, 1996; Powel, 1996).

Although ports are regarded as a safe vascular access alternative, postinsertion, port-related complications reported in outpatient and inpatient populations include

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