Nerve Injuries During Venipuncture by Sue Masoorli, RN

What is the procedure if the patient- during venipuncture- states that it felt like an electric shock went down the arm? This feeling of shock is a classic symptom when a needle point contacts a nerve. This could result in a permanent nerve injury and perhaps a malpractice charge involving the nurse... and this is not uncommon.

Two nerves which are most often injured during venipuncture are the radial and median nerves. The radial passes along the thumb side of the arm from the shoulder down into the wrist area close to the cephalic vein; the cephalic vein is preferred in most instances. This distal three inches of the radial nerve, JUST above the thumb, is the area most injured during IV procedures.

The median nerve, the largest nerve in the arm, runs inside the antecubital fossa, passes through the forearm into the palm of the hand. When blood is being drawn from the antecubital fossa or when inserting peripheral IVs, this nerve could accidentally be contacted and injured. Also, insertion of IV catheters into the superficial veins of the inner aspect of the wrist above the palm can result in serious injury to the median nerve and carpal tunnel syndrome.

If the patient complains of a feeling of electric shock as the needle is being inserted, the appropriate intervention is to remove the needle immediately causing only minimal damage and prevents permanent injury. However, if the nurse continues with the procedure, a permanent, progressive, and painful disability resulting in reflex sympathetic dystrophy or Complex Regional Pain Syndrome (CRPS) can result. The patient’s symptoms can include: hypersensitivity to temp changes, a mottled and cold hand/forearm, excessive nail and hair growth, and the inability to lift heavy objects. CRPS is diagnosed by nerve conduction studies and the patients’ history. Treatments can include long-term pain control with narcotics, multiple nerve blocks, implanted morphine pumps, TENS units, splints, and/or casts. The Infusion Nursing Standards of Practice* can be used in court to determine if a nurse delivered appropriate infusion care to the patient. The standards state: “site selection should avoid areas of joint flexion”. The wrist and antecubital fossa are areas of joint flexion and insertion of peripheral IV catheters into these areas can result in the decision that there was a deviation from the standard of practice.

Also, nerve compression injuries can occur when an infiltration of a large amount of IV fluid enters the tissues creating compartment syndrome. The length of which determines the amount of nerve damage. If, when the patient complains of tingling, the infusion is not stopped, a fasciotomy is required to relieve the pressure and a second surgical procedure required to close the wound.

Nerve injury related to venipuncture is one of the most common areas of nursing malpractice and one in which the nurse is considered the primary defendant. Therefore, anytime the patient complains of tingling or “electric shock” during venipuncture or IV infusion........the infusion must be stopped immediately.
* Infusion Nursing Standards of Practice 2000 11/12 (5).