

Hematoma Prevention

#3202

It is not unusual for hospitalized patients to experience bruising of their arms as a result of blood specimen collection. Sometimes it's unpreventable. Other times hematoma formation can result from a poorly performed phlebotomy procedure. In some cases, as when a blood vessel is severely injured due to a traumatic phlebotomy, the patient might have extensive bleeding throughout the arm to the point the extremity is black and blue from top to bottom. This is more likely to occur when the patient is on anticoagulant therapy.

A traumatic phlebotomy.....what is that? Any time the person collecting the blood specimen probes blindly in hopes of finding a vein, the underlying structures can be traumatized. It is not just the tip of the needle that is sharp. The entire bevel of every needle is razor sharp, and everything it comes into contact with gets sliced with each movement of the needle. Probing is also against the Clinical and Laboratory Standards Institute's (CLSI) venipuncture standards. Some patients are more prone to developing a hematoma, such as those with fragile skin, fragile veins, low platelet counts, or receiving anticoagulant therapy.

How you can prevent or reduce the occurrence of hematomas:

- 1) This should go without saying, but release the tourniquet before removing the needle.
- 2) Never probe around in hopes of finding a vein.
- 3) Always maintain adequate pressure on the puncture site until the bleeding has stopped. Bending the elbow up is not enough. If you allow the patient to hold pressure on the site, make sure the pressure is being maintained. It's your job to be sure.
- 4) Perform a two-point check to be sure bleeding has stopped. Lift the gauze and spend 5-10 seconds watching for bleeding through the puncture or a raising or mounding coming from the underlying tissues. If there is a possibility the needle might have punctured the back side of the vein during the venipuncture, such as when you have to pull back a bit to obtain a blood flow, it is critically important that you watch the site carefully before bandaging. Additional time and pressure will likely be necessary if the needle has passed through the back of the vein.
- 5) Do not bandage and leave the patient's side until you have determined bleeding has stopped. Bleeding that continues beyond several minutes should be brought to the attention of the patient's nurse or physician.



Healthy veins are elastic, like a rubber band, and quickly seal after a venipuncture. Factors that affect the elasticity of veins include age, chemotherapy, intravenous drug use, disease states, past trauma to the vessels, and genetics. Healthy blood has the ability to limit its loss by forming a clot at the puncture site. The body's ability to control blood loss is influenced by many factors, including use of over-the-counter medications such as aspirin that "thins" the blood, anticoagulants and other medications that can delay or prevent clotting, low platelet counts, and special factors in the blood which may be absent or insufficient. When the body is not actively bleeding, it is in a state of *hemostasis*. Hemostasis is controlled by a process known as the *coagulation cascade*. The coagulation cascade is a complex process which begins with tissue damage that severs or punctures blood vessels. When blood vessels are cut, bleeding commences and platelets begin to clump together at the site of the break in the vessel. Thrombin, fibrinogen, platelets, and various clotting factors get involved in plugging the hole in the blood vessel. If any one of the cellular or chemical processes along the way is not working correctly, prolonged bleeding can occur.

As a phlebotomist, you will probably not know which patients will have issues with inelastic veins or who may be taking medications that thin their blood. You may not know if they have low platelets or insufficient clotting factors in their blood. What you do have, though, is the ability to properly assess your patient after the venipuncture is complete. Take the time to be sure the bleeding has stopped after each and every venipuncture.

Follow these rules:

1. Make sure the tourniquet is released before needle removal.
- 2) Never probe around with the needle in hopes of finding a vein.
- 3) Lift the gauze and watch for bleeding from the puncture site and a mounding-up of tissue from beneath the puncture site. If noticed, maintain further pressure until all bleeding has stopped. Always take the time to watch for signs of bleeding before you bandage the patient.





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In the article about hematoma prevention you learned that excessive bruising can be a sign of poor phlebotomy technique. You learned that there are various factors that can predispose a patient to bruising such as issues with their veins or the way their blood clots. You also discovered there are steps you can take with each and every patient to help prevent them from developing a hematoma when you perform a venipuncture.

Test Your Knowledge:

1. What is the two-point check?
 - a) checking twice to make sure all used supplies have been cleared from the bedside
 - b) watching for bleeding from the puncture site and a mounding-up of tissues below the puncture site
 - c) double checking the lab requisition for completeness

2. What factors can predispose a patient to excessive bleeding at the puncture site?
 - a) fragile vein, disease processes, and age
 - b) taking medications that influence blood clotting
 - c) a and b

3. What procedure might lead to a patient developing a hematoma?
 - a) bandaging the patient without looking at the puncture site to determine if bleeding has stopped
 - b) observing the puncture site to watch for bleeding from the puncture site and beneath it
 - c) maintaining adequate pressure on the site until the bleeding appears to have stopped

4. True or False
Hematomas are to be expected when performing routine phlebotomy.

5. True or False
Fragile veins may require additional pressure and time to completely stop bleeding.

6. True or False
Patients receiving anticoagulant therapy may require additional pressure and time to completely stop bleeding.

7. What measures might be taken to prevent a venipuncture site from developing a hematoma?
 - a) maintain consistent pressure for an adequate amount of time
 - b) checking the site before bandaging to make sure bleeding has stopped at the puncture site and from the tissues beneath
 - c) a and b

8. True or False
Patients who do not develop hematomas after venipuncture will have less damage to their veins and surrounding tissues and therefore will be less likely to become difficult draws later on.

Name: _____

Date: _____

Facility/Supervisor _____

Dept: _____