

An Article from
Vein Access Technologies

Natural Dilatation vs. Artificial Dilatation

By
M. Gail Stotler, Vein Access Technologist / B.S.N., R.N. /
Biology / Anatomy / Physiology / Physics / Chemistry / Math

Published by
Vein Access Technologies, a division of The Nurses' Station, P.C.
#2 Terminal Drive, Suite 1, East Alton, Illinois 62024
618-259-7781
www.veinaccesstechnologies.com

Copyright © 2007. All rights reserved.

Natural Dilatation Vs. Artificial Dilatation
of the Vein

NATURAL DILATATION

A natural dilatation of the vein occurs when the vein is gently palpated. Because the vein wall has a smooth muscle middle layer (called the media) and because the wall of the vein is innervated (it has nerve endings that are sensitive and respond to stimuli – hot, cold, gentle touch and pain), WE can cause that vein to relax – with gentle touch (massaging that smooth muscle in the wall of that vein) which causes the muscle to relax and allows for a stretch and this results in extra filling of blood in that particular segment of vein. This extra filled vein segment is said to have DILATED. And it dilated (enlarged, stretched) and filled with blood to the extent or degree that NATURE intended for it to. NOT BEYOND what nature intended for it to.

ARTIFICIAL DILATATION

An artificial dilatation occurs when the tourniquet is applied too tight. This ‘too tight tourniquet’ stops the return flow of venous blood right at the site of the tourniquet (like a ‘dam’ stops the flow of water). And since venous blood continues to be made and continues its return flow, when that return flow reaches the ‘dam’ it can’t go any further and that segment of vein, just below the ‘dam’, begins to distend, and distend, and distend, andtill it is ready to rupture...

If it doesn’t rupture upon venipuncture, that segment of vein begins to LEAK;
it leaks serum, through the overstretched, thin walled segment of vein out into the surrounding subcutaneous tissue (the fat).
This leakage is called an extravasate, or an INFILTRATE,
or (lymph) edema.....

That segment of vein wall is stretched and filled **BEYOND THE LIMITS** that nature intended for it – *over stretching the muscle and the nerves in the wall.*

Now that you know the difference, ponder these questions:

How cruel would it be to stick a needle into an already over stretched screaming nerve ending?

What will happen to an over stretched, thinned wall water balloon when you stick it with a needle?

What kind of injury occurs to the tissue at that site?

How long will it take to form an effective clot over that size of an injured area?

THIS is some of the '*missing information*'.

References

Gray's Anatomy

Guyton and Hall's Medical Textbook of Physiology



Vein Access Technologies