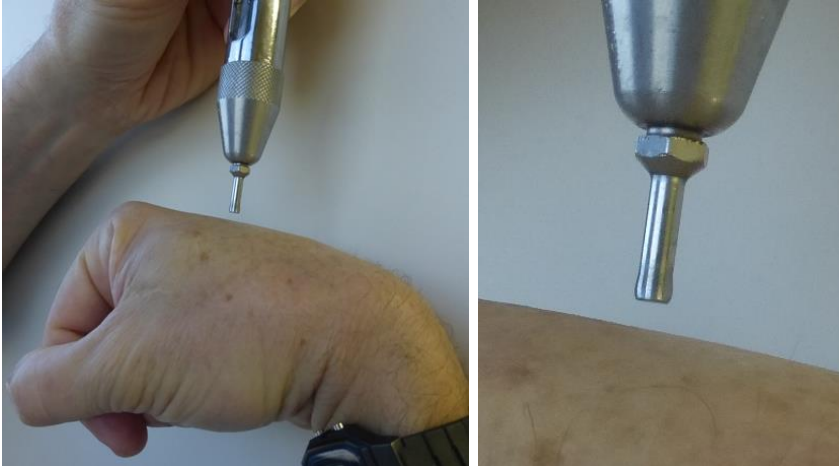


Matt,

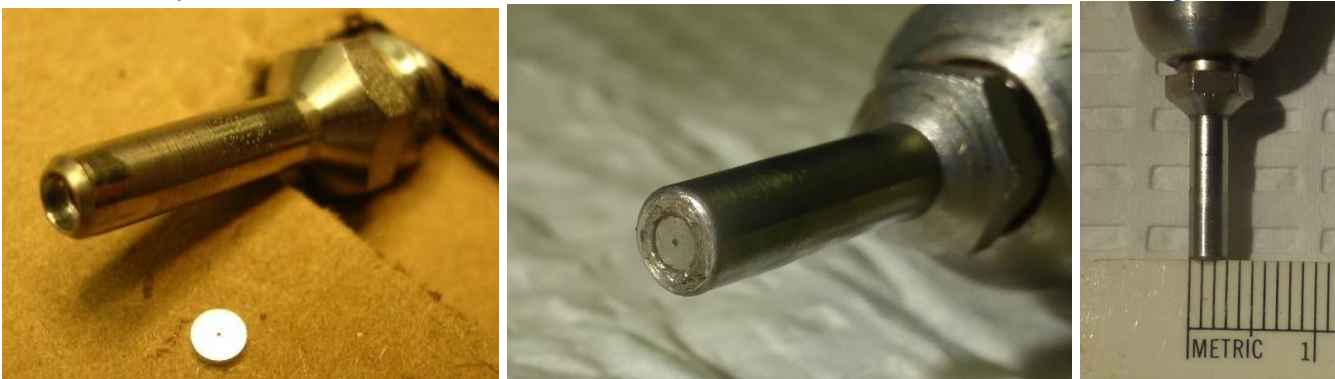
On July 5, you asked the following question, "if we had a patient with known HIV, would we be happy to use the madajet on him and then use it on ourselves after having simply rested the madajet in the disinfectant, changed the sheath, and fired it in between use?"

It may have been rhetorical, but you got only 1 fairly direct answer when Chic said that "If I would not use it on myself, I would not allow it's use on my patient.". I would also like to answer, but let me first digress.

Let's suppose that one is stable enough to hold the MadaJet over the target with a 3 mm gap between the MadaJet tip (ExtendaTip) and the skin - like this:



During manufacture, Mada mounts a small disk into the distal end of the ExtendaTip, then folds the rims of the tip over it. Within that disk is a hole from which the anesthetic is discharged.



Given that the tip width is 3 mm, my guess is that the hole is around 0.2 mm in diameter. The opening in the skin created by the entry of anesthetic looks like this:

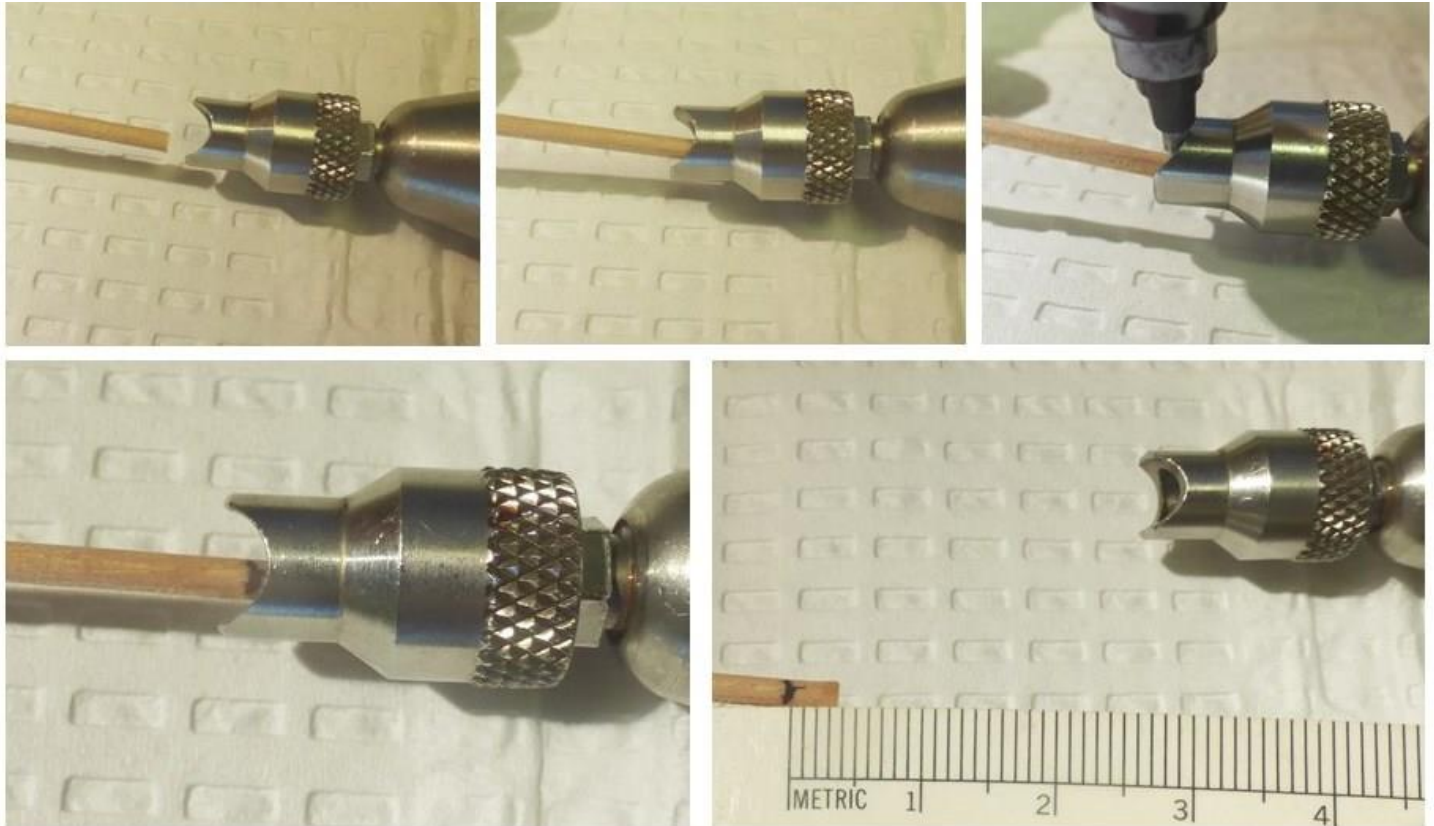


The mark on the left (blue arrow) represents the true opening size, not much larger than the opening in the ExtendaTip. The one on the right looks a bit larger only because it began to bleed long after the MadaJet was removed from the area.

Now, if the ExtendaTip never touches the skin when it is used on an HIV or Hep-C positive patient, does anyone in this forum actually believe that a microdrop of anesthetic mixture is going to penetrate the skin of the HIV+ patient, engage a virus particle, and then leap back out of the skin opening, fly across the 3-mm space between the skin and the ExtendaTip, and then re-enter the 0.2-mm hole in the ExtendaTip from whence it came? I have never taken a course in fluid dynamics, but such physical behavior does not seem possible to me no matter what government officials say. (Given that Obama's mother has never been in Kenya, I also believe that it was not possible for him to have been born there, despite what some US "government officials" have said.)

HOWEVER, we do know that the sheath of the MadaJet DOES touch the HIV+ patient. Does that pose a risk?

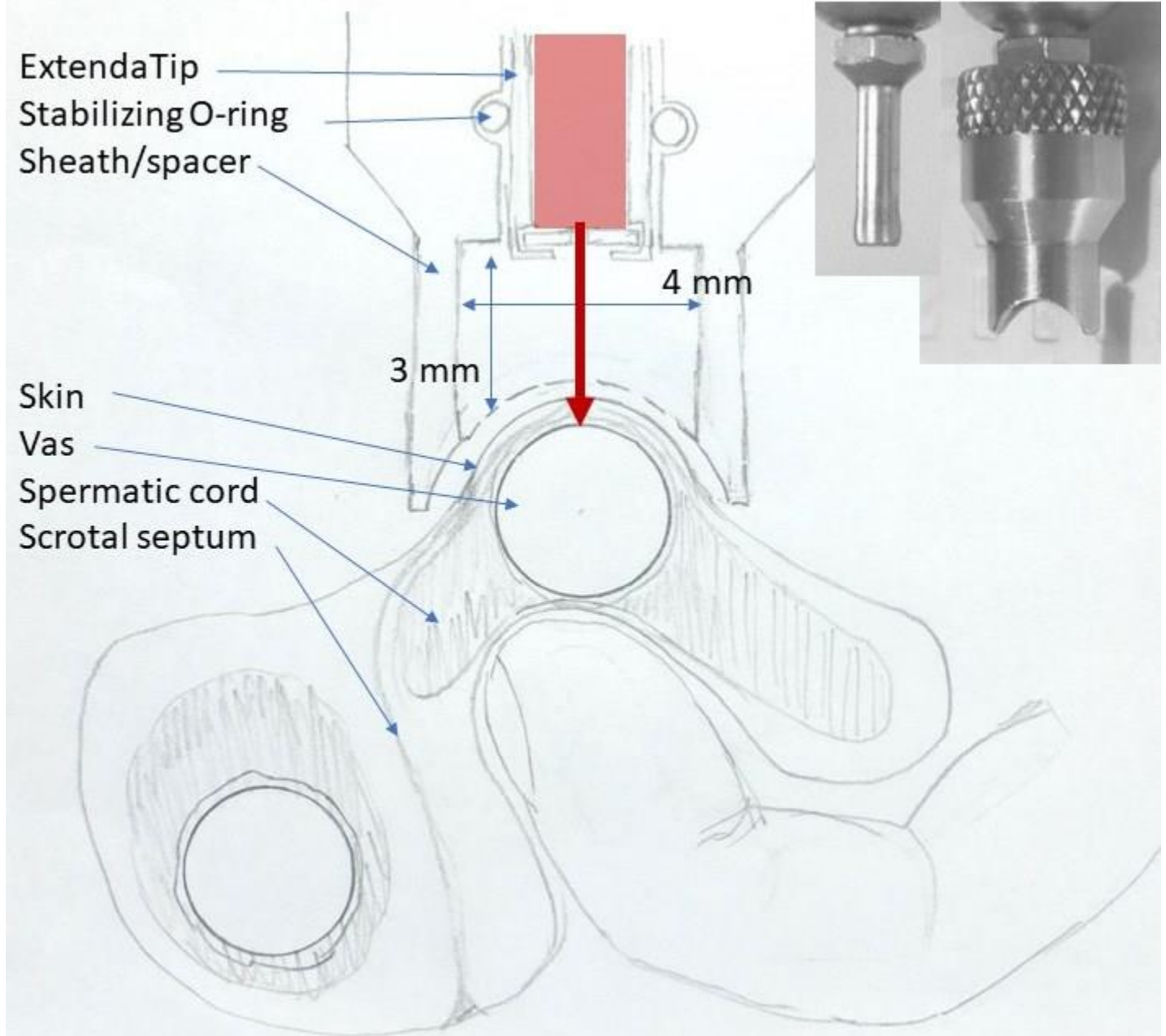
The "sheath" is also known as a "spacer". It prevents the ExtendaTip from getting closer to the skin than 3 mm:



The inner enclosure of the spacer is about 4 mm in diameter:



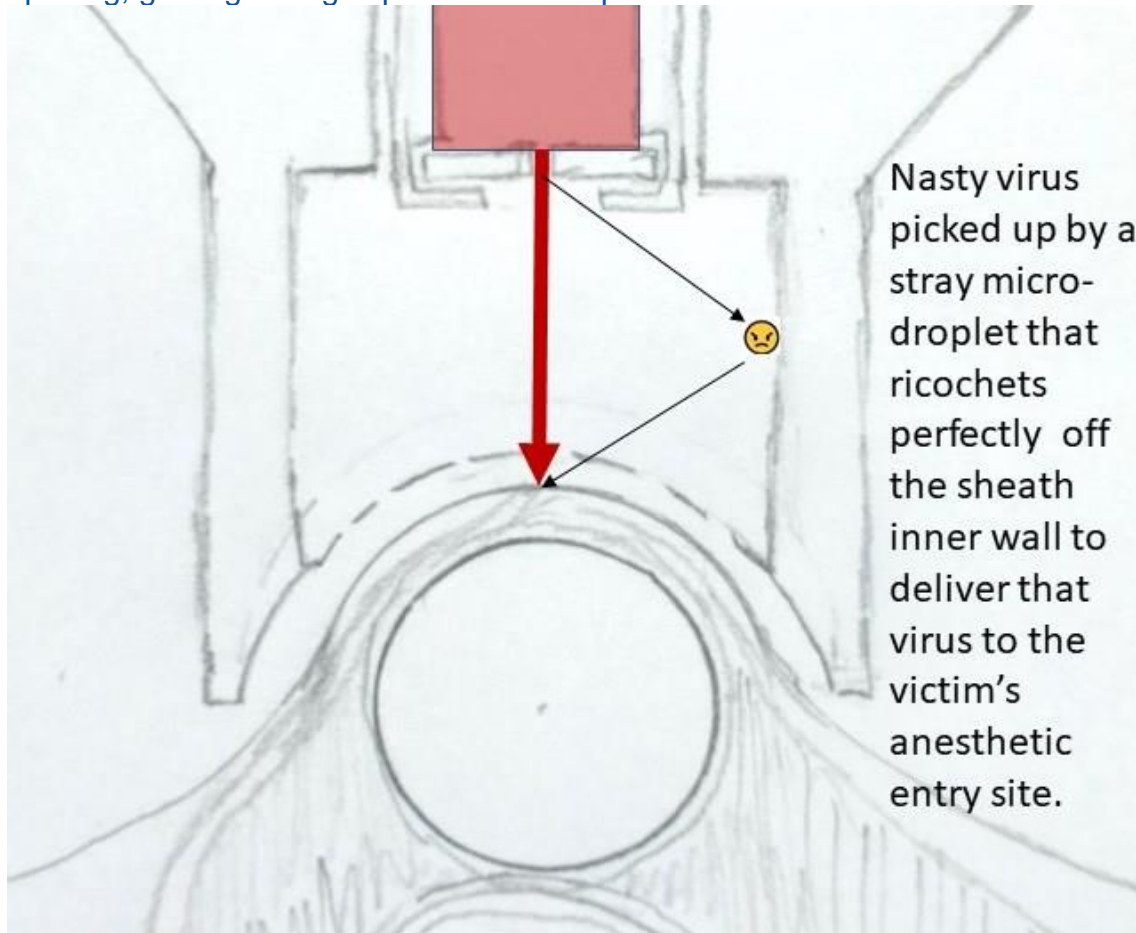
Diagrammatically, it looks like this:



Once again, when the MadaJet is used on an HIV+ patient, my guess is that the risk is low of a micro-droplet of anesthetic picking up a virus particle in the patient, then exiting the skin, then bouncing back up across the 3 mm gap and into the 0.2 mm ExtendaTip opening, now poised for injection into the next poor HIV- vasectomy patient.

But what about the micro-droplet picking up a virus particle, exiting the same skin opening, and bouncing obliquely out of the skin and landing on the inner surface of the spacer chamber, thereby contaminating it. If we did not soak the sheath in MadaCide, or autoclave the sheath for a higher level of disinfection, or dispose of the sheath and use a brand new one (to eliminate prions in the event that the HIV+ patient also has mad cow disease), would the next patient be at risk?

In order for the next (HIV-) patient to be at risk, we would have to assume that a micro-droplet of anesthetic is going to veer off course as it exits the 0.2 mm opening in the ExtendaTip at bullet-like muzzle velocity, strike the inner wall of the sheath, pick up the contaminating virus particle, then bounce off the inner wall at a perfect angle to join the rest of the micro-droplets entering the skin opening, gaining enough speed to catch up with them.



Assuming that this is possible, as some government officials may believe (some US government officials believe that climate change is just a hoax perpetrated by the Chinese), does soaking the tip in MadaCide between patients do any good?

According to the [product description](#):

MadaCide-FD is a hospital-level Disinfectant/Cleaner/Deodorizer that is designed specifically for the infection control needs of healthcare. Efficacy tests have demonstrated that this product is an effective bactericide, virucide, germicide, and fungicide.

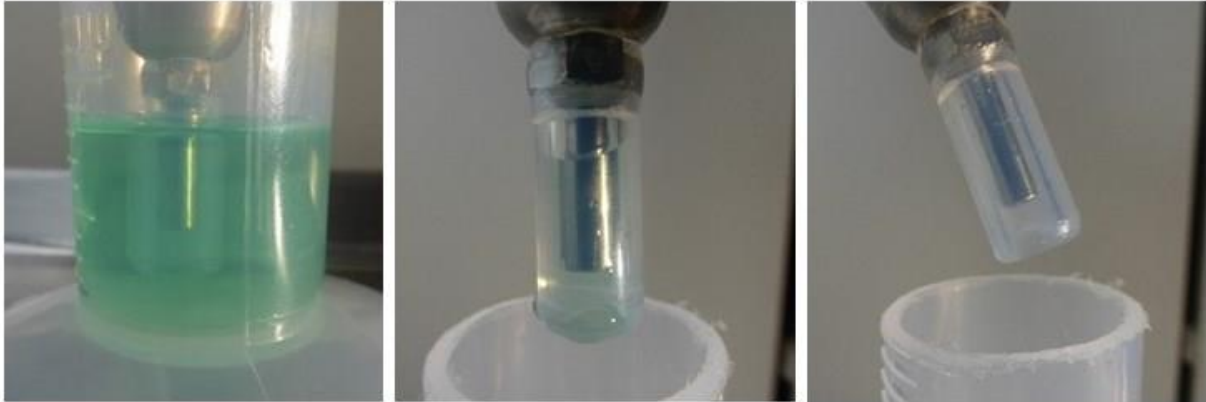
It is formulated to disinfect hard, non-porous, inanimate, environmental surfaces, including chrome, glass, painted surfaces, plastics and stainless steel. It is ideal for use with most medical surfaces such as operating rooms, respiratory therapy equipment and medical instruments. Unique anti-corrosion formulation will not damage lenses, cement, plastics, rubber, steel, aluminum, brass or other metal when used as directed.

Kills Influenza A, HIV, Hepatitis B & C, TB, MRSA, VRE, and SARS.

How do we know that MadaCide gets into the sheath of a MadaJet stored vertically in a MadaJet stand? Perhaps a bubble prevents MadaCide from entering.

Back in 2002, MadaJet spacers were made of translucent silicone. Despite hugging the hex of the ExtendaTip tightly, they were wobbly. Using a Dremel to cut a wedge into the end helped a little, but the tips were eventually replaced by stainless steel spacers thanks to some creative design work by Ron Weiss and the Mada engineers.

Nonetheless, these old spacers, along with use of a transparent MadaJet stand (history of MadaJet stands at <https://www.vasweb.com/madajetstands.pdf>), allow us to see into the spacer chamber as it is lowered into MadaCide made green by a few drops of food coloring.



MadaCide ascends the chamber of a vintage 2002 silicone spacer and is released with a quick shake ...



... and MadaCide appears to coat the inside a modern stainless steel spacer.

So I feel comfortable that MadaCide "sterilizes" the inside of a MadaJet sheath at least as well as we "sterilize" the skin with alcohol or chlorhexidine before plunging a needle through it to draw a blood sample, insert a PICC line, or inject anesthesia.

So to answer Matt's question ... YES, I would be happy to let you use a MadaJet on me right after you use it on an HIV+ patient, even if you don't change the clean-looking sheath or try to disinfect it in any way and even if you don't fire it between use on him and use on me. If the spacer is overtly bloody after it is used on the HIV+ patient (because you hit a skin vessel that bled vigorously between firings), please rinse it with tap water, give it a shake, and let it sit in MadaCide for 30 seconds before using it on me.

Doug Stein