

# NEEDLES AND PINS



## A Case Study in the Management of Occupational Exposure to Percutaneous Injuries



by

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### Part I, The Incident

Jennifer is a 19-year-old college sophomore who has always wanted to be a dentist, like her father, her sister Eileen, and now her brother George, who is currently in dental school. As an entering third-year student, George has just started treating patients. Last Friday, he came home and told Jennifer, "You know, there's a summer program at the dental school for college students who are thinking about becoming dentists and dental hygienists. If you want, you can work in the dental clinics as a dental assistant this summer." Jennifer excitedly signs up for the program.

Jennifer's first day in the clinic begins uneventfully; she had completed a "crash course" in the basics of dental assisting the week before, although she believes she already knows a lot about dentistry because of her exposure to the profession through her family. She is scheduled to help George do a restoration on a fellow student, Ralph. Jennifer picks up the appropriate tray set-up: instruments, gauze, amalgam, some topical anesthetic, a 27-gauge long needle, and some local anesthetic (2% lidocaine with 1:100,000 epinephrine). She places the instruments and materials out on George's tray and sits down, ready to begin.

Ralph is a second-year dental student with decay on a lower molar that was detected when their class took radiographs on each other. He is assigned to be George's patient for the morning. The two dental students only know each other by sight; the classes do not associate much until they are in the clinic. After thoroughly reviewing the medical history and receiving approval to start the procedure from the instructor, Ralph sits down in the chair and George, who has done several amalgam restorations before, prepares to administer the anesthesia to Ralph. After carefully drying the tissue and applying the topical anesthetic, George places the needle at the site of injection, and aspirates the syringe. Blood enters the cartridge, so he repositions the syringe and aspirates a second time -- no blood this time. He completes a perfect mandibular block, followed by a long buccal infiltration. He hands the syringe back to Jennifer, who is paying close attention. Jennifer picks up the needle cap and holds it in her left hand, and attempts to slide the needle back into the cap. She accidentally punctures her glove and sticks her index finger with the needle.

**Answer the following questions:**

1. What is the significance of the presence of blood during aspiration?
2. What are potential consequences of not repositioning the needle if the aspiration is positive?
3. What should the students do after the needlestick?
4. How could this needlestick have been prevented?
5. What diseases have the potential to be transmitted from this needlestick?

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### PART II - JENNIFER'S DILEMMA

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Jennifer frantically runs to the nearest sink. When she looks at her finger, she sees blood under the glove; when she takes the glove off all she can see is what looks like a lot of blood on her finger. She begins washing her finger with soap and squeezing it to extrude blood from the puncture wound. Meanwhile, back at the chair, George calls over Dr. Daly, the closest instructor on the floor. Dr. Daly is a 60-year-old retired Navy prosthodontist who has been at the dental school on a volunteer basis for about six months. When George tells him what happened, he tells them, "Don't worry about it. I've been stuck more times than I can count. The risk of getting anything is negligible. Just go ahead and keep working."

#### Answer the following questions:

6. Were the students given the correct advice about continuing their work?
7. Were the students given the correct advice about the risk of disease transmission being negligible?
8. Was Jennifer in compliance with post-exposure protocol?

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### PART III - RALPH'S RESPONSE

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George remembers that last month, as part of clinic orientation, Dr. Winston, the infection control officer, told the students that they should call her directly when a needlestick has occurred. He mentions this to Dr. Daly, and Dr. Daly agrees that they should call Dr. Winston.

Prompted by Dr. Daly's phone call, Dr. Winston arrives in the clinic. She talks to Ralph, who has been sitting quietly in the dental chair during all the excitement. She questions him about his risk factors for disease. According to Ralph, he has none, but seems quite defensive and even angry when asked direct questions about his risk of HIV and Hepatitis. Dr. Winston delicately asks him if he would agree to have his blood tested for these infections. Ralph refuses to be tested, stating, "This is a violation of my privacy. I don't have to be tested if I choose not to be." Jennifer and George, dismayed at Ralph's attitude, walk out through the building to student health services. On their way out, they pass a group of their friends. When they tell George's friend John what has happened, he responds "I've heard that Ralph is gay."

#### Answer the following questions:

9. Was Ralph within his rights to refuse getting his blood drawn?
10. Why is Jennifer going to student health services?
11. What would happen if it is found that Jennifer's blood tested "negative" for an infectious disease? How about if it tested "positive"?
12. Is there any significance to Ralph's sexual orientation?



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