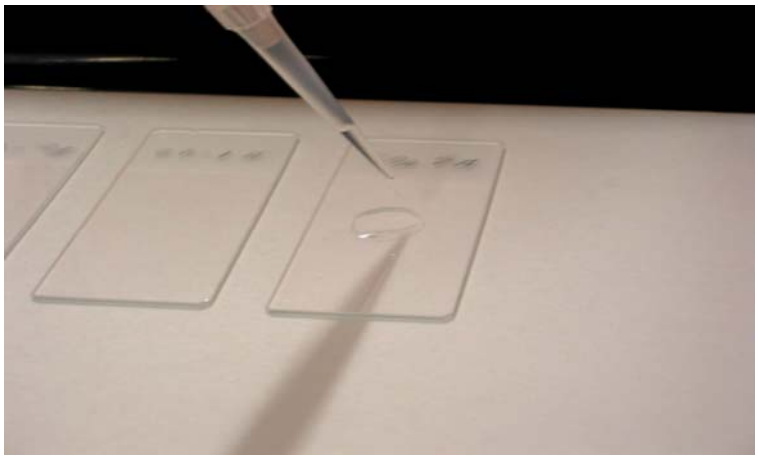
Liqui-PREP™

The Next Generation of Liquid Cytology

Technical Tips



Number: 00015

Date: 06/15/06

SUBJECT: Fine Needle Aspirates

TECHNICAL TIP OVERVIEW:

This Technical Tip offers suggestions on collection and processing of Fine Needle Aspirates. The main challenge with Fine Needle Aspirates are low cellularity and at times red blood cells.

In this Technical Tip, we will focus on collection and handling of the Fine Needle Aspirate.

TECHNICAL TIP: 00015

Fine Needle Aspirate Collection:

- COLLECT In **Liqui-PREP™ Preservative Solution** - The more times specimens are transferred between solutions, the more cell loss will be experienced. Therefore, using the **Liqui-PREP™ Preservative Solution** as both a preservative and transportation solution is advised. Additionally, using a capped 15 ml centrifuge tube for both collection and processing reduces cell loss.
- TOO LITTLE **Liqui-PREP™ Preservative Solution** CAN LEAD TO CELL LOSS - It seems logical to use 1 or 2 ml of Preservative Solution can result in better cell recovery, however, this is not true. Using 5 ml of **Preservative Solution** allows for better washing of the syringe post Fine Needle Aspirate Collection. 5 or more aspiration and expelling cycles clear all be a very few cells from the collected specimen. It is very important for the person collecting the specimen take the time to wash the collected specimen out of the syringe. 5 ml of **Preservative solution** is allows for good washing and reduces the chance of cells being re-deposited in the syringe, which can happen when using only 1 or 2 ml of Preservative Solution.
- COLLECTION SUMMARY:
  - ⇒ Prior to the collection, fill a 15 ml capped centrifuge with 5 ml of **Liqui-PREP™ Preservative Solution.**
  - ⇒ After collection, the person collecting must rinse the complete specimen out of the syringe by drawing Preservative Solution into the syringe and expelling it several times, 5 or more, to wash any cells remaining in the syringe barrel or needle out into the centrifuge tube.
  - ⇒ Cap and label the centrifuge tube and send it to the laboratory for processing.

Processing the Fine Needle Aspirate:

- Allow at least 30 minutes for the specimen to Preservative - Prior to processing, when the specimen arrives in the laboratory, make sure the specimen is well preserved. This should take a minimum of 30 minutes.

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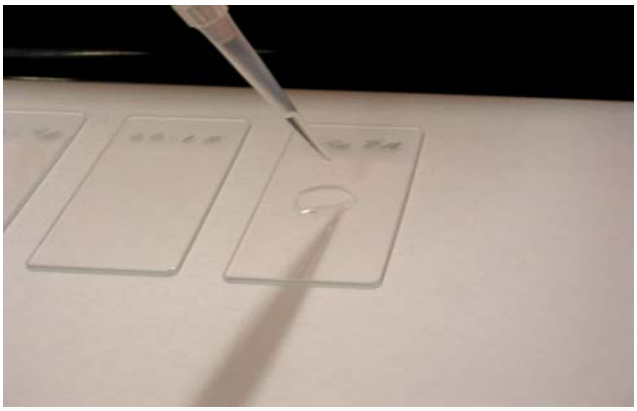

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Processing the Fine Needle Aspirate: (continued

- Make sure the centrifuge is calibrated to obtain 1,000 to 1,200 g-force.– Centrifugation is extremely important. Assuming the centrifuge is running at the correct speed is not adequate. The centrifuge should be calibrated to run at 1000 g-force when the dials indicate that is the speed. Every laboratory should have a centrifuge tachometer for this calibration. If the centrifuge is not running at 1000 to 1200 g-force, the cells will not be well packed in the bottom of the centrifuge tube and thus some will be lost during supernatant removal. Only swinging bucket centrifuges should be used for processing Fine Needle Aspirates.
- Removal of the supernatant technique - Novice laboratory personnel tend to carefully pour off the supernatant, which in-fact washes cells out of the centrifuge tube. The best action is to rapidly invert the centrifuge tube and holding it in that position until all the supernatant is removed from the centrifuge tube. Removal using a fine pasture pipette has been attempted by some laboratory personnel, which takes time and a very steady hand. These attempts have yielded poor results as compared to good cell packing and proper supernatant removal technique.
- How much Cell Base should be used - Most successful users use a high concentration and low concentration method. They use 50 µl of Cell Base, mix very well and then make one 10 to 14 mm circle. They then pipette another 50 µl of Cell Base into the tube, mix well and make another slide 10 mm or less in size.
- What about Bloody Specimens - The **Liqui-PREP™ Preservative Solution** is slightly lytic, however at times specimens are very bloody. For very bloody specimens, we suggest adding 5 ml of l**Liqui-PREP™ Lytic Reagent** to the capped 15 ml centrifuge tube when it arrives in the laboratory. Allow this to sit for 5 to 15 minutes and then centrifuge as normal and decant the supernatant. Our experience has shown this to lyse most of the blood.
- PROCESSING SUMMARY:
  - ⇒ Allow at least 30 minutes for preservation (fixation) of the specimen.
  - ⇒ Make sure the centrifuge is operating at the correct speed. 1000 to 1200 g-force is necessary for good cell packing. Higher speeds, using a standard centrifuge will not adversely effect cell packing. Only a swinging bucket centrifuge can be used for Fine Needle Aspirates.rior to the collection, fill a 15 ml capped centrifuge with 5 ml of **Liqui-PREP™ Preservative Solution.**
  - ⇒ Rapidly invert the centrifuge tube, tube should be completely upside down, to remove the supernatant.
  - ⇒ Use two separate additions of 50µl of cell base to make a high and a low concentration slide. Keep the circles small 10 to 14 mm.
  - ⇒ For bloody specimens add 5 ml of **Liqui-PREP™ Lytic Reagent** to the 5 ml of **Liqui-PREP™ Preservative Solution**, hold for 5 to 15 minutes (depending on amount of blood) centrifuge and decant.

Any Questions, Contact your local Liqui-PREPTM Representative or :

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