

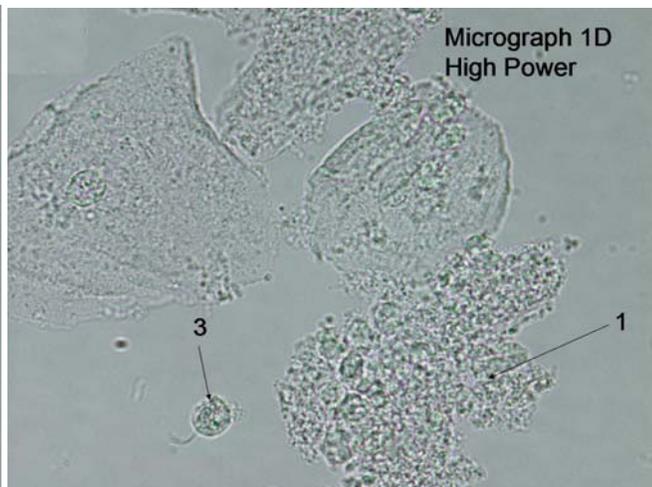
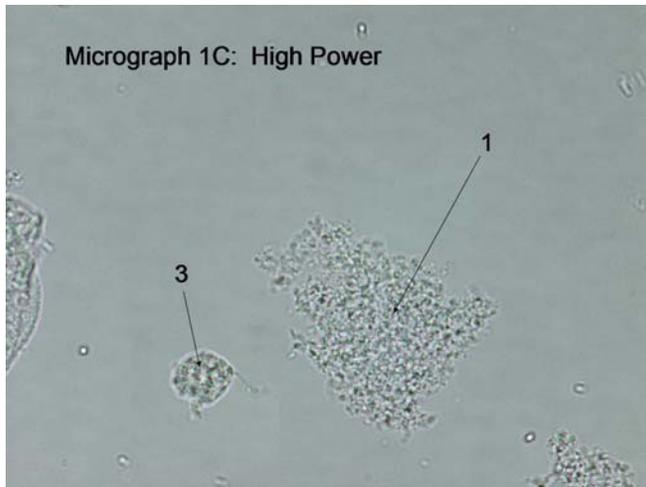
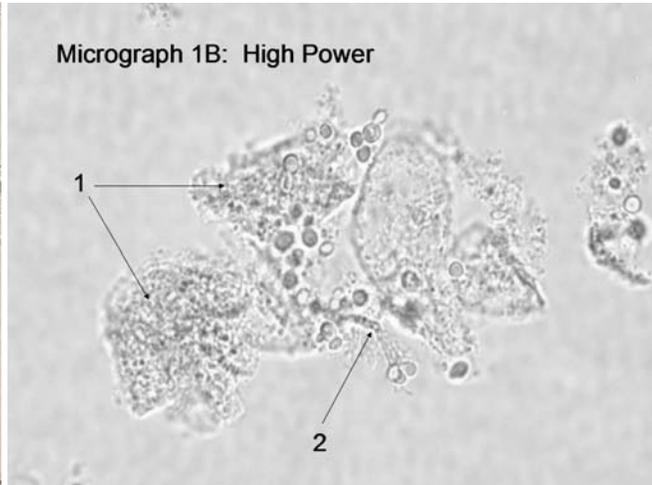
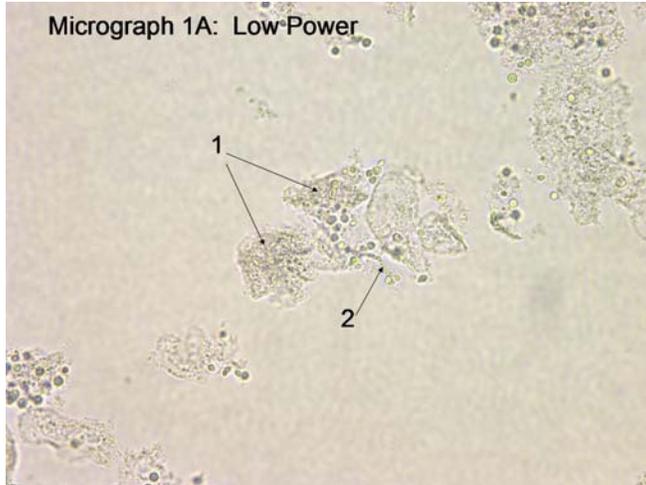
Wet Mount Proficiency Test 2008A Critique

Expected Answers: Patient 1, Micrographs 1a, 1b, 1c, 1d

Item #1: Clue Cell

Item #2: Pseudohyphae

Item #3: Trichomonas (not graded due to non-consensus)



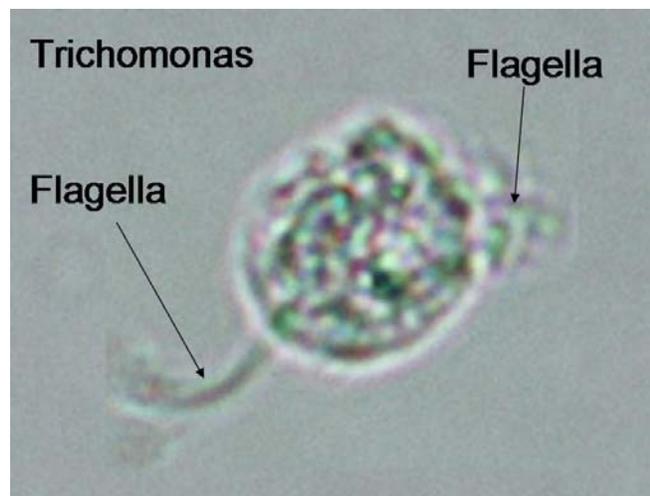
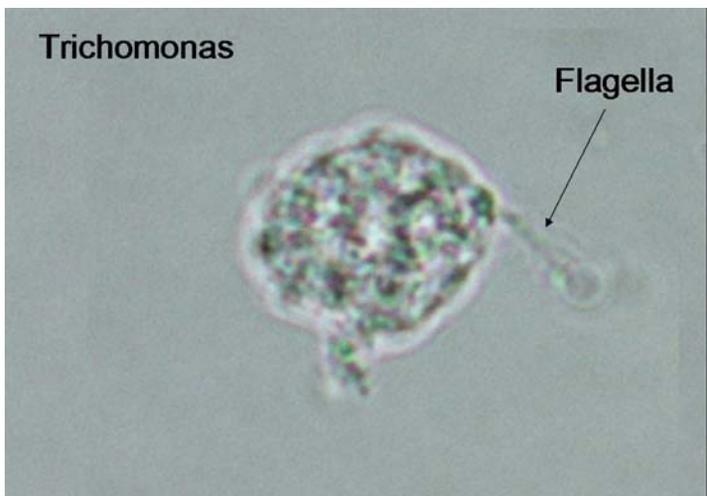
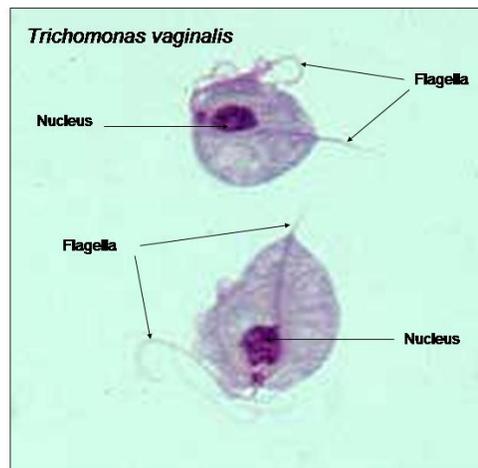
Clue Cell: Clue cells are squamous epithelial cells that are covered with a thick mat of bacterial cells and is associated with bacterial vaginosis. The traditional definition of a clue cell is that the bacterial overgrowth is so thick that all cell detail (such as the cell nucleus and the cellular edge) are totally obscured. It is possible, however, to detect the nucleus in a clue cell by using the fine focus to focus through several focal lengths.

Pseudohyphae: These are fragile tube-like structures that arise through elongation of the yeast form of *Candida*. They are called pseudohyphae because they lack true branching as seen with mold like fungi. The side walls are parallel to each other which is an important characteristic that helps separate pseudohyphae from artifact whose side walls vary in width. Small oval structures called blastoconidia are often seen attached along the length of the pseudohyphae. The blastoconidia are smaller in size when compared to the yeast form of *Candida*.

Trichomonas: This item was not graded due to non-consensus among participants. Consensus is defined as a minimum of 80% of participants properly identifying this item as trichomonas. This level of agreement was not obtained. 33(55%) participants correctly identified this item as trichomonas, 24(40%) participants incorrectly identified this item as a white blood cell, 2(3%) participants incorrectly identified this item as a red blood cell, and 1(2%) participant incorrectly identified this item as a clue cell.

- Trichomonas are typically tear-shaped and very motile, but when they begin to die (within 10 minutes of specimen collection), they become sedentary and begin to round up.
- Trichomonas should only be reported when motility is observed
- Trichomonas have four flagella facing ‘forward’ and a fifth facing ‘backward’ which is attached to an undulating membrane.

Obviously, motility cannot be shown in a photomicrograph. The examples shown here have rounded up but flagella can be seen at the front (anterior) and rear (posterior) of the cell. Refer to the educational challenge in the 2007B Wet Mount Proficiency Challenge Critique for additional information regarding *Trichomonas vaginalis*. Closer views of the trichomonads seen in photomicrographs 1c and 1d are shown below.



As reminder, you may use the nucleus of the squamous epithelial cell as a size marker when evaluating the sample:

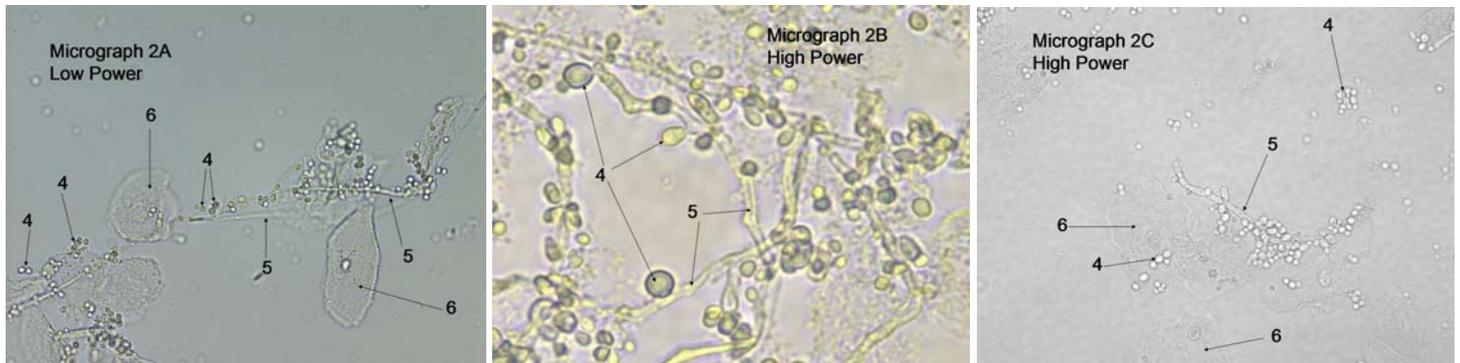
- Nucleus = 15 microns Yeast = 5-7 microns RBC = 6-8 microns
- WBC = 15 microns Trichomonas = 20 microns

Expected Answers: Patient 2, Micrographs 2a, 2b, 2c

Item #4: Yeast Cell

Item #5: Pseudohyphae

Item #6: Squamous epithelial cell(s) – not a clue cell



Yeast Cell: the cells vary in shape from circular to oval, they are smaller than a red blood cell usually up to 7.5 microns (μm) in diameter. In budding yeast cells, a single bud is observed.

Pseudohyphae: refer to the description in item #2.

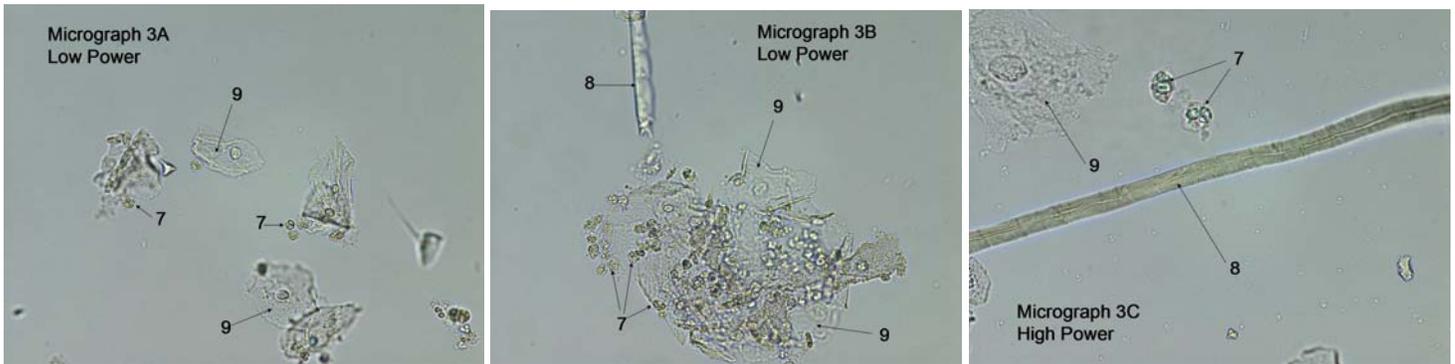
Squamous Epithelial cell – not a clue cell: The squamous epithelial cell is a large cell with a clearly visible cell nucleus and a well defined cell boundary. The cell nucleus of the squamous epithelial cell is a handy tool which provides a size standard for the assessment of the size of red blood cells, white blood cells, and yeast cells.

Expected Answers: Patient 3, Micrographs 3a, 3b, 3c

Item #7: White blood cell(s)

Item #8: Artifact

Item #9: Squamous epithelial cell – not a clue cell



Squamous epithelial cell – not a clue cell: See the comment for item #3.

Artifact: A variety of artifacts may be observed which the analyst must be able to differentiate from actual cellular elements. Artifacts include pollen, oil droplets, starch crystals, and cotton fibers (just to name a few). The artifacts shown here must be differentiated from pseudohyphae.

1. Fibers are generally larger in size than pseudohyphae
2. Pseudohyphae have parallel sides with a consistent dimension between the sides while fibers show variable widths along the fiber.
3. Fibers tend to be birefringent. That is they change color when focusing up and down on the object. Colors are often gold or blue and result from the microscope light being refracted by the fiber.

White Blood Cell: These cells are larger than Red Blood Cells and are approximately the same size as the nucleus of a squamous epithelial cell. You can most easily compare the relative size of the white blood cell with the size of the squamous epithelial cell nucleus by screening on low power. Switch to the high power objective, however, to make a definitive identification of White Blood Cells. Under high power, the nuclear detail of the WBC becomes apparent. The WBC is characterized by a multilobed nucleus (usually three distinct lobes can be identified).

Results Reviewed with Staff

To be completed after results have been received from the laboratory director or designee. Results must be shared with all staff performing wet mount analysis. By signing below, testing staff acknowledge that the results of the wet mount proficiency samples have been reviewed and when appropriate, corrective action has been documented.

Testing Person: _____

Date: _____

Testing Person: _____

Date: _____