ASCUS (Atypical Squamous Cells of Undetermined Significance) was first introduced as a diagnostic term with The Bethesda System for reporting cervical/vaginal cytologic diagnoses (PAP Smears) in 1988. ASCUS is basically a diagnosis of exclusion and is to be used to characterize squamous cells that are not normal but do not have sufficient cytologic features to allow for a more specific diagnosis. ASCUS should not be used to replace older terms such as “inflammatory atypia” or “reactive atypia” which should be classified as Reactive Cellular Changes. ASCUS should be used to classify smears where the degree of nuclear atypia precludes the exclusion of a diagnosis of dysplasia but is insufficient to allow for a definitive diagnosis. Specific examples include cases where there are exuberant reactive and/or reparative changes or in cases where there are subtle nuclear features suggesting mild dysplasia (low grade squamous intraepithelial lesion) but these changes are not fully developed and thus not specific for a diagnosis. It should be noted that occasionally a diagnosis of ASCUS is used when the differential diagnosis includes severe dysplasia (high grade squamous intraepithelial lesion). In the past these cases were often termed simply as “atypical squamous metaplasia”. In some cases artifacts such as air-drying of the atypical cells and/or paucity of atypical cells may contribute to the use of the ASCUS classification.

When a diagnosis of ASCUS is rendered, the cytopathologist should attempt to minimize ambiguity by qualifying the diagnosis with a comment as to the exact differential diagnosis and recommended follow-up, when appropriate. For example, the comment in a particular case might state that while a diagnosis of Reactive Cellular Changes is favored, Low Grade Squamous Intraepithelial Lesion can not be excluded with recommended follow-up entailing simply another PAP Smear in a three to six month interval. In another case the comment might state that the differential diagnosis is between immature squamous metaplasia or High Grade Squamous Intraepithelial Lesion and recommend colposcopic evaluation.

ASCUS should not be used as a “wastebasket” term and thus should represent a relatively small percentage of the total cytopathologic cases at a given institution. As a general rule, the rate of ASCUS diagnoses should not exceed two to three times the rate of dysplasia in a laboratory. For example, if a laboratory has a dysplasia (Squamous Intraepithelial Lesion) rate of 1.5% of total cases then the ASCUS rate should be no higher than 3.0 - 4.5% of the institution’s diagnoses.
At Rex Healthcare our cytology laboratory currently has an overall dysplasia (Squamous Intraepithelial Lesion) rate of 2.6% of cases. Our ASCUS rate is roughly equivalent at 2.5% of cases. The Medical Director of the Cytology Laboratory is Dr. Keith V. Nance, a Board Certified Cytopathologist, who can be reached at 784-3286.

Keith V. Nance, M.D.

Respiratory Infection - Diagnosing Upper

As of July 17, 1999, you will no longer be able to order routine throat cultures or nose cultures. For suspected pharyngitis or tonsillitis, cultures will be screened only for beta streptococcus. If we receive a throat culture, we will process it as a beta strep screen. We will add the following to the report...

**Throat swabs are screened for beta strep. If more extensive testing is desired, collect a nasopharyngeal swab.**

If we receive a nose culture we will test it as a nasopharyngeal culture. We will then add the following to the report... **The preferred specimen is a nasopharyngeal swab.** Nose cultures will no longer be routinely performed.

The following will provide you a little background in diagnosing upper respiratory infection. The upper respiratory tract includes the epiglottis, larynx, nasal cavity and the pharynx.

The primary cause of **pharyngitis or tonsillitis** is *Streptococcus pyogenes* (or group A, beta hemolytic streptococcus). Cases of pharyngitis caused by groups B, C and G have been reported but are less common. A screening test or culture for beta strep should be performed to confirm these infections.

Acute **laryngitis** is caused almost exclusively by viruses and is generally a benign illness. Cultures are generally not indicated. If examination of the larynx reveals an exudate or membrane on the pharyngeal or laryngeal mucosa, then streptococcal infection, mononucleosis, or diphtheria should be suspected. The hallmark of diphtheria is the presence of an exudate or membrane that is usually on the tonsils or pharyngeal wall. Cultures may be obtained for *C. diphtheriae*, but it is necessary to specify that organism in the test request.

**Laryngotracheobronchitis**, or croup, is a relatively common illness in young children. Viruses are a primary cause of croup. Although mass immunization has greatly reduced the incidence of pertussis, cases may still occur. Nasopharyngeal swabs are collected by Rex lab and sent to the State Public Health Laboratory for direct fluorescent antibody staining and culture for *Bordetella pertussis*.

**Epiglottitis** is an infection of the epiglottis and other soft tissues above the vocal cords. Most commonly, children between 2 and 6 are infected.
Epiglottitis is usually caused by bacteria. *Haemophilus influenza* is the primary cause. Diagnosis is established on clinical grounds. Bacteriologic culture of the epiglottis is contraindicated because swabbing of the epiglottis may lead to respiratory obstruction. Bacteremia with the causative agent usually occurs in children with epiglottis.

**Peritonsillar abscesses** may involve other types of bacteria and when suspected, culture of the abscess is appropriate. Both aerobic and anaerobic abscess cultures might be attempted.

**Rhinitis** (common cold) is caused by viruses and nose cultures are not indicated.

Acute **sinusitis** usually develops during the course of a cold or influenzal illness and tends to be self-limited. In most cases, a diagnosis can be made on the basis of physical findings, history, radiographic studies, and other imaging techniques. If cultures are to be done, an otolaryngologist should obtain the material from the maxillary sinus by puncture and aspiration of the fluid during surgery. Sinus drainage is generally contaminated with normal respiratory flora and cultures of drainage are of limited value.

Nasopharyngeal swabs may be attempted since this area is continuous with the mucosa lining of the sinuses, Eustachian tube, middle ear and the lower respiratory tract. However, only when a predominance of a pathogen is detected are these cultures helpful as they will also contain high levels of normal respiratory flora.

Nasal screens for carriage of *Staph aureus* or *Neisseria meningitidis* are not routinely performed and special arrangements must be made with the laboratory for these procedures.

*Karl T. Kleeman, PhD*


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**Change in**

As of Saturday, July 17, 1999, the current Microbiology cumulative chart report will no longer be available. Instead, reports will be issued directly from the laboratory computer. For these reports, the results from each specimen
Microbiology technologists will hand deliver and chart the reports Monday through Friday. On weekends, Microbiology reports will be delivered to the floor along with other laboratory reports for charting. As reports are updated, new pages will be placed in the report replacing the old page for that accession.

A new cumulative report is being developed. We are not sure how long this will take. In the meantime, please let us know if we can assist you in any way. For further information call the laboratory at 784-3051 and ask for Sheila McMahon or Susan Tricas.

For further information, call the Laboratory (784-3040). Telephone extensions are: Pathologists' Direct Line (3201), Dr. Kleeman (3063), Sharon Logue (Lab Director 2400), Robin Ivosic (Core Lab Manager 3053), Clark Zervos (Blood Services Manager 785-4770), Rex Outreach (784-3040), Karen Sanderson (Customer Service Manager 3396).