INTERPRETATION/RESULT:

NEGATIVE FOR INTRAEPITHELIAL LESION OR MALIGNANCY	#IRN
ORGANISMS PRESENT:	#OP
TRICHOMONAS VAGINALIS	#TV
FUNGAL ORGANISMS MORPHOLOGICALLY CONSISTENT WITH CANDIDA SPP.	#IM
SHIFT IN FLORA SUGGESTIVE OF BACTERIAL VAGINOSIS	#BV
BACTERIA MORPHOLOGICALLY CONSISTENT WITH ACTINOMYCES SPP.	#AS
CELLULAR CHANGES CONSISTENT WITH HERPES SIMPLEX VIRUS	#IH
OTHER NONNEOPLASTIC FINDINGS:	#OTH
REACTIVE CELLULAR CHANGES ASSOCIATED WITH INFLAMMATION	#RI
REACTIVE CELLULAR CHANGES ASSOCIATED WITH RADIATION	#RAD
REACTIVE CELLULAR CHANGES ASSOCIATED WITH IUD	#IUD
REACTIVE CELLULAR CHANGES ASSOCIATED WITH DEPOPROVERA	#DEPO
REACTIVE CELLULAR CHANGES ASSOCIATED WITH ATROPHY	#AT
GLANDULAR CELLS STATUS POST HYSTERECTOMY	#GPH
ENDOMETRIAL CELLS (IN A WOMAN >39 YEARS OF AGE)	#EMPM
EPITHELIAL CELL ABNORMALITIES	#ECA,
ATYPICAL SQUAMOUS CELLS OF UNDETERMINED SIGNIFICANCE	#ASCUS
ATYPICAL SQUAMOUS CELLS OF UNDETERMINED SIGNIFICANCE CANNOT EXCLUDE HSIL	#ASCH
LOW GRADE SQUAMOUS INTRAEPITHELIAL LESION (LSIL) ENCOMPASSING: HPV/MILD DYSPLASIA/CIN 1	#LSIL
HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION (HSIL) ENCOMPASSING: MODERATE AND SEVERE DYSPLASIA, CIS/CIN2 AND CIN3	#HSIL
HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION (HSIL) ENCOMPASSING: MODERATE AND SEVERE DYSPLASIA, CIS/CIN2 AND CIN3 WITH FEATURES SUSPICIOUS FOR INVASION	#HSILS
SQUAMOUS CELL CARCINOMA	#SCC
ATYPICAL ENDOCERVICAL CELLS (NOS)	#AEC
ATYPICAL ENDOMETRIAL CELLS (NOS)	#AEM

EPITHELIAL CELL ABNORMALITIES (Continued)

ATYPICAL GLANDULAR CELLS (NOS)	#AGC
ATYPICAL GLANDULAR CELLS, FAVOR NEOPLASTIC	#AGCFN
ENDOCERVICAL ADENOCARCINOMA IN SITU	#AIS
ADENOCARCINOMA, ENDOCERVICAL	#ADEC
ADENOCARCINOMA, ENDOMETRIAL	#ADEM
ADENOCARCINOMA, EXTRAUTERINE	#ADEX
ADENOCARCINOMA, NOT OTHERWISE SPECIFIED (NOS)	#ADNOS
OTHER MALIGNANT NEOPLASMS: (SPECIFY)	#MAL

SPECIMEN ADEQUACY:

SATISFACTORY FOR EVALUATION ENDOCERVICAL/TRANSFORMATION ZONE PRESENT	#SATZP
SATISFACTORY FOR EVALUATION ENDOCERVICAL/TRANSFORMATION ZONE ABSENCE	#SATZA
PARTIALLY OBSCURING RED BLOOD CELLS	#POR
PARTIALLY OBSCURING INFLAMMATION	#POI
PARTIALLY OBSCURING AREAS OF THICK CELLULARITY	#POC
PARTIALLY OBSCURING AREAS OF BACTERIAL OVERGROWTH	#POB
CONVENTINAL PAPS WITH ANY OF THE LIMITING FACTORS ABOVE FOR IMPROVED DIAGNOSTIC ACCURANCY, A REPEAT PAP IN 3-6 MONTHS USING A LIQUID BASED PAP TECHNOLOGY IS SUGGESTED.	#LBP
UNSATISFACTORY FOR EVALUATION SPECIMEN REJECTED/NOT PROCESSED (SPECIFY REASON)	#SREJ
UNSATISFACTORY FOR EVALUATION SPECIMEN PROCESSED AND EXAMINED BUT UNSATISFACTORY FOR EVALUATION OF EPITHELIAL ABNORMALITY BECAUSE OF: (REASON)	#SPBU

EDUCATIONAL NOTES AND SUGGESTIONS:

RECOMMEND COLPOSCOPY AND OR BIOPSY AS CLINICALLY INDICATED.	#RBIO
RECOMMEND REPEAT PAP IN 4-6 MONTHS OR BIOPSY.	#R6M
RECOMMEND REPEAT PAP IN 3 MONTHS	#R3M
RECOMMEND TREATMENT WITH TOPICAL ESTROGEN AND REPEAT PAP.	#RTE

RECOMMEND TREATMENT OF THE INFECTION AND REPEAT PAP, ALLOW 5 WEEKS FOR CELLULAR REGENERATION. #RXR

AUTOMATED REVIEW:

THIS CASE WAS SCREENED USING THE TRIPATH FOCALPOINT SLIDE PROFILER, FORMALLY AUTOPAP PRIMARY SCREENING SYSTEM. THE SYSTEM EVALUATES AND RANKS CELLULAR IMAGES, ARCHIVING UP TO 25 PERCENT OF SLIDES FOR NO FURTHER REVIEW. #SBPA

AUTOMATED REVIEW:

THIS CASE WAS INITIALLY SCREENED USING THE TRIPATH FOCALPOINT SLIDE PROFILER, FORMALLY AUTOPAP PRIMARY SCREENING SYSTEM. THE SYSTEM EVALUATES AND RANKS CELLULAR IMAGES, AND HAS BEEN SHOWN TO REDUCE FALSE NEGATIVE AND FALSE POSITIVE RESULTS OVER CONVENTIONAL SCREENING. #SBPB

ANCILLARY TESTING:

THIS PATIENT'S LIQUID BASED PAP SPECIMEN HAS BEEN REFLEX TESTED PER YOUR ORDER FOR LOW AND/OR HIGH RISK HPV USING DIGENE'S HYBRID CAPTURE 2 HPV TEST. RESULTS WILL FOLLOW IN 2-3 WEEKS. #RHPV

ANCILLARY TESTING:

THIS PATIENT'S LIQUID BASED PAP SPECIMEN HAS BEEN FURTHER TESTED PER YOUR ORDER FOR CHLAMYDIA AND/OR GONORRHEA USING ROCHE DIAGNOSTICS CORPORATION COBAS AMPLICOR™ PCR TECHNOLOGY. RESULTS WILL FOLLOW IN 2-3 WEEKS. #RCG

SCREENING TEST:

A PAP SMEAR IS A SCREENING TEST. THE TEST IS DESIGNED TO AID IN THE DETECTION OF PREMALIGNANT AND MALIGANT CONDITIONS OF THE UTERINE CERVIX. FALSE NEGATIVE AND FALSE POSITIVE REPORTING DOES OCCUR.
NATIONAL FIGURES PLACES THE ERROR RATE AT 5% OR HIGHER. THE PAP SMEAR IS NOT BY ITSELF A DIAGNOSTIC PROCEDURE AND SHOULD NOT BE USED WITHOUT COLPOSCOPY AND BIOPSY OR OTHER MEANS OF DETECTING CERVICAL CANCER. #PAPS

HORMONAL EVALUATIONS:

HORMONAL EVALUATION INCLUDING MATURATION INDEX APPLIES ONLY TO VAGINAL SMEARS AND IS NOT REPORTED ON CERVICAL SMEARS. #XHE

PAP SMEAR REPORT: VAGINAL WALL CYTOLOGY

THE REPORT REQUIRES SUBMISSION OF A SEPARATE SLIDE SPECIFICALLY SAMPLING THE VAGINAL WALL. RESULTS ARE REPORTED AS:

HORMONAL PATTERN COMPATIBLE WITH AGE AND HISTORY. #HPC

PAP SMEAR REPORT: VAGINAL WALL CYTOLOGY

THE REPORT REQUIRES SUBMISSION OF A SEPARATE SLIDE SPECIFICALLY SAMPLING THE VAGINAL WALL. RESULTS ARE REPORTED AS:

HORMONAL PATTERN INCOMPATIBLE WITH AGE AND HISTORY #HPI

PAP SMEAR REPORT: VAGINAL WALL CYTOLOGY

THE REPORT REQUIRES SUBMISSION OF A SEPARATE SLIDE SPECIFICALLY SAMPLING THE VAGINAL WALL. RESULTS ARE REPORTED AS:

HORMONAL EVALUATION NOT POSSIBLE DUE TO (SPECIFIED FINDING) #HPN

PAP SMEAR REPORT: UNSATISFACTORY #RU

STUDIES HAVE SHOWN THAT PAPS EXHIBITING BORDERLING OR UNSATISFACTORY SPECIMEN ADEQUACY RESULTS HAVE A HIGHER THAN NORMAL ATYPICAL RATE BASED ON A LONGITUDINAL FOLLOW UP OF UNSATISFACTORY PAPS.

0.3% OF 71,872 PAPS UNSATISFACTORY 26% FROM WOMEN WITH A HISTORY OF ABNORMAL 62% HAD A FOLLOW UP PAP OR BIOPSY WITHIN 6 MONTHS WHILE 31% HAD NO FOLLOW-UP WITHIN 18 MONTHS. FIRST FOLLOW-UP: SIL +11%, ASC 10% NEGATIVE COHORT: SIL 3%, ASC 4.3% (P<0.1) 16% OF WOMEN HAD SIL OR CANCER ON FOLLOW-UP 12% HAD CONTRIBUTING BENIGN CONDITIONS

REF: Ransdell et al, Cancer Cytopathol 1997

PAP SMEAR REPORT: UNSATISFACTORY #RU2

STUDIES HAVE SHOWN THAT PAPS EXHIBITING BORDERLING OR UNSATISFACTORY SPECIMEN ADEQUACY RESULTS HAVE A HIGHER THAN NORMAL ASSOCIATION WITH ABNORMAL PAPS. PAP DIAGNOSES OR OTHER OR UNSATISFACTORY ACCOUNTED FOR 2.6% OF THE PAP RESULTS FROM PATIENTS WITH CIS AND 3.7% OF PAP RESULTS FROM PATIENTS WITH INVASIVE CARCINOMA.

REF: Diagn Cytopathol, 2004 Apr; 30(4):227-34

PAP SMEAR REPORT: UNSATISFACTORY #RPAP

THIS SPECIMEN WAS REPEATED DUE TO SCANT CELLULARITY OR OBSCURING SUBSTANCES THAT MADE THE ORIGINAL SLIDE UNSATISFACTORY FOR CYTOLOGY EVALUATION. THE RESULTS OF THIS EFFORT WILL BE REFLECTED IN THE SPECIMEN ADEQUACY STATEMENT ABOVE. PLEASE REVIEW OUR COLLECTION PROTOCOL "LIQUID BASED PAP SPECIMEN COLLECTION," LOCATED ON OUR WEB SITE "DOCTORSLABINC.COM" FOR ADDITIONAL INFORMATION AND RECOMMENDATIONS TO REDUCE OR ELIMINATE UNSATISFACTORY SPECIMENS.

SPECIMEN SAMPLING DEVICE #RD

THE SAMPLING DEVICE(S) (BRUSH, BROOM, AND/OR SPATULA) WAS LEFT IN THE CYTYC PRESERVCYT SOLUTION DURING THE COLLECTION PROCESS. THIS IS CONTRARY TO THE "PAPANICOLAOU TECHNIQUE APPROVED GUIDELINES" (NCCLS DOCUMENT GP15-A) AND MAY ADVERSELY AFFECT DIAGNOSTIC ACCURACY AND SPECIMEN ADEQUACY.

CONVENTIONAL PAP WITH ASCUS/AGUS #LBPH

FOR IMPROVED DIAGNOSTIC ACCURACY A REPEAT PAP IN 5-6 WEEKS USING A LIQUID BASED PAP TECHNOLOGY AND REFLEX TESTING FOR HIGH RISK HPV IS SUGGESTED.

CONVENTIONAL PAP WITH AREAS OBSCURRED #LBP

FOR IMPROVED DIAGNOSTIC ACCURACY A REPEAT PAP IN 3-6 MONTHS USING A LIQUID BASED PAP TECHNOLOGY IS SUGGESTED.

TRANSFORMATON ZONE #PTZ

NOTE: THE PRESENCE OR ABSENCE OF THE TRANSFORMATION ZONE IN POST MENOPAUSAL WOMEN IS USUALLY BASED ON CLINICAL HISTORY. THE ENDOCERVICAL OR METAPLASTIC CELLS REQUIRED TO CALL A SPECIMEN ADEQUATE ARE AT TIMES INDISTINGUISHABLE FROM PARABASAL CELLS COMMONLY PRESENT IN POST MENOPAUSAL WOMEN.

FOLLOW-UP RECOMMENDATIONS #PFU

PATIENT FOLLOW-UP SHOULD BE BASED ON THE ALGORITHMS INCLUDED IN THE: *"2006 CONSENSUS GUIDELINES FOR THE MANAGEMENT OF WOMEN WITH ABNORMAL CERVICAL CANCER SCREENING TESTS"* OR THE *"2006 CONSENSUS GUIDELINES FOR THE MANAGEMENT OF WOMEN WITH CERVICAL HISTOLOGICAL ABNORMALITIES"* PUBLISHED BY THE AMERICAN SOCIETY FOR COLPOSCOPY AND CERVICAL PATHOLOGY (ASCCP). A COPY OF THE ALGORITHMS CAN BE VIEWED ON-LINE AT: www.asccp.org.

Example Final Report

INTERPRETATION/RESULT:

EPITHELIAL CELL ABNORMALITIES

HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION (HSIL) ENCOMPASSING: MODERATE AND SEVERE DYSPLASIA, CIS/CIN2 AND CIN3 WITH FEATURES SUSPICIOUS FOR INVASION

ORGANISMS PRESENT:

BACTERIA MORPHOLOGICALLY CONSISTENT WITH ACTINOMYCES SPP

SPECIMEN ADEQUACY:

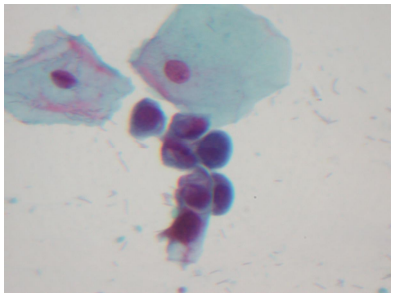
SATISFACTORY FOR EVALUATION
ENDOCERVICAL/TRANSFORMATION ZONE PRESENT
PARTIALLY OBSCURING AREAS OF BACTERIAL OVERGROWTH

EDUCATIONAL NOTES AND SUGGESTIONS:

AUTOMATED REVIEW:

ANCILLARY TESTING: THIS PATIENT'S LIQUID BASED PAP SPECIMEN HAS BEEN FURTHER TESTED PER YOUR ORDER FOR CHLAMYDIA AND/OR GONORRHEA USING ROCHE DIAGNOSTICS CORPORATION COBAS AMPLICOR™ PCR TECHNOLOGY. RESULTS WILL FOLLOW IN 2-3 WEEKS

SCREENED BY:
RESCREENED BY:
REVIEWED BY:
PATHOLOGIST DX:
CYTOLOGIST DX:
CPT CODE:



ORGANISMS PRESENT:

TRICHOMONAS

This *is* an oval or pear-shaped organism that varies from 8 to 3Oum (i.e., ranges in size from intermediate nucleus to parabasal cell). Severity of infection may be inversely related to the size. The trichomonas nucleus (thin, elliptical) and red granules in cytoplasm must be identified to diagnose this infection. Halos in intermediate cells and pink staining instead of blue-green may signal this infection along with concurrent infection with Leptrothrix.

CANDIDA

Associated with a change in vaginal glycogen, flora, or pH, Candida cannot be speculated based on morphology; a culture needs to be performed. Pap smear sensitivity is approximately 80%. Both pseudohyphae (sticks) and yeast (stones) may be present. If pseudohyphae alone are seen, consider Geotrichum; if yeast alone is seen, consider Torulopsis (Candida glabrata). These spores are tiny and surrounded by a thick non-staining coating. Squamous cells often look pale and eosinophilic.

COCCOBACILLI (Gardeneralla Vaginalis/HemophalusVaginalis)

A gram-negative, comma-shaped coccobacillus, the bacteria tend to agglomerate onto squamous cells (i.e., "clue cells"). The clue cells have a velvety surface, obscured cell edges, and are covered by small coccobacilli, but the background is otherwise clean, often accompanied by slight parakeratosis. A shift in vaginal flora is indicated by mixed coccobacilli, with or without clue cells. Associated findings include slight parakeratosis and clean background; B. vaginitis is absent these changes are not specific and can be seen in the absence of clinical symptoms.

ACTINOMYCETES

Associated with IUD use, rarely, it is associated with other foreign objects (e.g., tampons, pessaries). Colonies of variably grain-positive, long, thin, filamentous bacteria that are reddish, branch, are irregularly beaded, and radiate from a central area.

HERPES

A high false-negative rate is associated with Herpes. The most characteristic cells are multinucleated and the nuclei mold each other. The nuclei are enlarged and the chromatin marginates, resulting in a ground glass appearance. There may be red nuclear inclusions (said to be more characteristic of secondary infection). Genital herpes is associated with neonatal morbidity and mortality; therefore, it is very important to make the diagnosis in a pregnant patient.

LEPTROTHRIX

Both Lactobacilli and Actinomyces may be present. The organisms are long, thin less than half as thick as Candida), and flexible. It looks like limp spaghetti.

FOLLICULAR OR LYMPHOCYTIC CERVICITIS

Normally seen in postmenopausal women, rarely in younger age groups. It is characterized by the presence of loose aggregates of lymphoid cells, mainly mature and immature lymphocytes, with a few plasma cells and "tingible body" macrophages.

BACTERIAL VAGINOSIS

Bethesda considers "true" Clue Cells (defined as a squamous cell completely covered with coccobacillary organisms that stretch beyond the outline of the cell) to be diagnostic of G. vaginalis infection while a simple shift in vaginal flora or less extensive coverage of the cells is more in keeping with "Bacterial Vaginosis" caused by G. vaginalis or other bacteria such as Bacteroides, Mobiluncus, Peptococci and Peptostreptococci.

The terminology is vague and allows all forms of bacterial vaginosis (which has been associated with pelvic inflammatory disease, preterm birth, postoperative gynecologic infections, and abnormal Pap smears) to be mentioned.

OTHER NON-NEOPLASTIC FINDINGS:

REACTIVE CELLULAR CHANGES ASSOCIATED WITH INFLAMMATION

NUCLEI

Minimal enlargement (usually <2X an intermediate nucleus).
Reactive endocervical cells can show greater nuclear enlargement.
Occasional binucleated or multinucleated.
Smooth nuclear membranes.
Mild hyperchromasia possible, but chromatin remains fine and uniform.
Degeneration may result in pyknosis or karyorehexis
Nucleoli, single or multiple, can be prominent.

Cytoplasm may show:
Polychromasia and Vacuolization
Perinuclear halos (without peripheral thickening)

TYPICAL REPAIR

Cytologic changes as above, but cells in flat, monolayered sheets.
No loss of nuclear polarity.
Streaming often noted.
Typical mitotic figures may be seen
Single reparative cells are usually absent.

REACTIVE CELLULAR CHANGES ASSOCIATED WITH ATROPHY

Predominance of basal/parabasal cells.
Generalized nuclear enlargement without significant hyperchromasia.
Nuclear membranes, chromatin remains uniform.
+/- Naked nuclei due to autolysis.
+/- Cellular degeneration (i.e. shrunken cells mimicking parakeratosis).
Nuclear pyknosis.
Cytoplasmic eosinophilia/orangeophilia. "Pseudo-pseudoparakeratosis'.
+/- Abundant inflammation.
+/- Granular basophilic background (benign diathesis).
+/- Blue blobs.

REACTIVE CELLULAR CHANGES ASSOCIATED WITH RADIATION

Markedly enlarged (macrocytcs) without substantial increase in nuclear/cytoplasmic ratio.
Bizarre shapes possible

NUCELI
May be enlarged. May see both normal sized and enlarged nuclei in the same group
Binucleation or multinucletion common.
+/- Some hyperchromasia
Degenerative changes frequent (e.g., pale or hyperchromatic, smudgy chromatin, wrinkling, vacuolization).

CYTOPLASM
Vacuolization, polychromasia may be seen.

Note: Several chemotherapeutic agents used in the treatment of malignant tumors, particularly lymphomas, cause cellular changes similar to the effects that occur following irradiation.

REACTIVE CELLULAR CHANGES ASSOCIATED WITH IUD

Small clusters of glandular cells (usually*5-15* cells).

NUCLEI
Degeneration frequent.
Nucleoli may be prominent.

CYTOPLASM
Variable in amount.
Large vacuoles frequent (signet rings may form).

BACKGROUND
Clean, no diatheses
Psammoma body-like calcification may be present.

Note: Actinomycetes organisms have been reported on smears from patients wearing IUDs.

REACTIVE CELLULAR CHANGES ASSOCIATED WITH DEPOPROVERA

GLANDULAR CELLS STATUS POST HYSTERECTOMY

Data from the literature show that no patient having benign glandular cells in vaginal smears post-hysterectomy developed recurrent or de novo neoplastic lesions regardless of the history of prior malignancy.

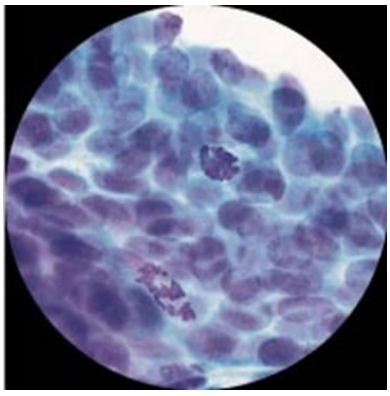
The likely origins of these benign cells include: prolapse of uterine tube, vaginal endometriosis, fistula, vaginal adenosis not associated with DES exposure, or glandular metaplasia associated with prior radiation or chemotherapy.

ENDOMETRIAL CELLS (IN A WOMAN >39 YEARS OF AGE)

Report all normal-appearing, spontaneously exfoliated, endometrial cells in women 40 years of age or older.

HYPERCHROMATIC CROWDED GROUP (HCG)

Possibility of a neoplastic lesion is the reason to carefully evaluate all HCGs in the Pap smear. CIS is usually characterized by abnormal cells with irregular nuclear membranes and an associated squamous dysplasia. However, some cases have unexpectedly bland appearing cells and no accompanying dysplasia (more likely in older women). Mitotic figures in HCGs strongly suggest a neoplastic lesion. (See photo below)



EPITHELIAL CELL ABNORMALITIES

ASCUS (ATYPICAL SQUAMOUS CELLS OF UNDETERMINED SIGNIFICANCE

ASCUS is defined as cellular abnormalities that are more marked than those seen in reactive change, but quantitatively or qualitatively falls short of a definitive diagnosis of a squamous intraepithelial lesion. The diagnosis should be qualified as to whether a reactive process or a squamous intraepithelial lesion is favored.

NUCLEI

2 1/2 to *3* times size of intermediate nucleus or 1 1/2 to 2 times the size of metaplastic nucleus.
Slightly increased nuclear/cytoplasmic ratio.
Variation in size and shape may occur.
Binucleation may occur.
Membrane smooth, or very limited irregularity.
Normochromatic or mildly hyperchromatic.
Chromatin evenly distributed without granularity.

CYTOPLASM

Usually mature, superficial/intermediate type (i.e. squamous atypia). Can also be metaplastic (atypical squamous metaplasia).

ASCUS

FIVE INDEPENDENT CYTOLOGIC CRITERIA HELP IDENTIFY WOMEN AT RISK OF CIN

CIN I	*	***CLEAR PERINUCLEAR SPACES***
CIN II/III	*	***CLEAR PERINUCLEAR SPACES***
	*	***HYPERCHROMASIA***
	*	***MODERATE ANISOKARYOSIS***
	*	***INCREASED NUCLEAR VOLUME OF METAPLASTIC CELLS.***

ASCUS (ATYPICAL REPAIR)

Marked cellular changes in tissue fragments or sheets with:

Nuclear piling up
Significant anisonucleosis.
Irregular chromatin distribution.
Nuclear pleomorphism *(size,* shape).

Differential diagnosis is exuberant repair vs. carcinoma.
Note: Repair lacks both tumor diathesis and numerous single abnormal cells.

ASCUS (ASSOCIATED WITH ATROPHY – ATROPHIC ATYPIA)

Nuclear enlargement (>2X normal) and significant hyperchromasia.
Irregularity of nuclear contour or chromatin distribution.
Marked pleomorphism (tadpole, spindle cells).

Note: Differential diagnosis: HGS1L or SCC, estrogen test may be helpful.

ATYPICAL PARAKERATOSIS

Parakeratotic type cells (i.e. miniature superficial cells) demonstrating any or all of the following:

Cellular pleomorphism (caudate, elongate shapes).
Increased nuclear size and Hyperchromasia.
Single or in clusters.

LOW GRADE SQUAMOUS INTRAEPITHELIAL LESION (LSIL)

Encompasses a spectrum of non-invasive cervical epithelial abnormalities with or with out changes associated with HPV (Koilocytotic Atypia, Dyskeratocytic Squamous Cells, and Mild Dysplasia.)

CELLS
Single, or in *sheets*. Usually, mature type, Polygonal cell borders.

NUCLEI
At least 3x Area of intermediate nucleus with increased nuclear/cytoplasmic ratio.
Moderate variation in size/shape.
Binucleation or multinucleation frequent.
Nuclear membranes slightly irregular.
Hyperchromasia with uniform chromatin distribution. Chromatin smudging if associated with HPV.
Nucleoli rare, inconspicuous if present.

CYTOPLASM
Distinct cell borders. May have well-defined, perinuclear clearing.

Note: Requires peripheral dense rim of cytoplasm and nuclear abnormality to be diagnostic of HPV

Dyskeratocytes - diagnostic for HPV and present as keratinized squamous cells, staining a brilliant orange. They occur mostly in thick, three-dimensional clusters, characterized by the presence of vesicular nuclei with indistinct chromatin detail and loss of cellular polarity.

HIGH GRADE SQUAMOUS INTRAEPITHELIAL LESION (HSIL)

Encompasses a spectrum of non-invasive cervical epithelial abnormalities including moderate to severe dysplasia and CIS.

CELLS
Single, sheets, syncytial-likc aggregates.
Usually immature, rounded cell borders.
Overall cell size smaller than LGSIL.

NUCLEI
Enlarged in range of LGSIL, but diminished amount of cytoplasm.
Marked increase in nuclear/cytoplasmic ratio.
Hyperchromasia. fine to coarse, evenly distributed chromatin and Irregular outlines.

NUCLEOLI
Generally absent.

CYTOPLASM
Lacy and delicate (Carcinoma in situ)
Dense, metaplastic (Moderate Dysphasia)
Occasionally, densely keratinized (Keratinizing dysplasia)

NONKERATINIZING SQUAMOUS CELL CARCINOMA

CELLS
Single, or syncytial-like aggregates.
Cellular features of HGSIL plus prominent macro nucleoli
Markedly irregular chromatin, including course chromatin clumping.
Parachromatin clearing.

Note: Tumor diathesis (necrotic debris, old blood) often present.

SMALL CELL CARCINOMA

Relatively rare, but resemble anaplastic small cell (Oat-Cell) carcinoma of the lung with characteristic clusters of malignant cells and nuclear molding. The cells have scanty

cytoplasm and a round or oval nucleus with coarsely granular chromatin and small or absent nucleoli. No keratinization is seen in these tumors. The cells are slightly larger than lymphocytes and may be mistaken for them on a cursory examination.
Note: Differential Diagnosis: Small Cell Malignant Lymphoma.

KERATINIZING SQUAMOUS CELL CARCONOMA

CELLS
Single, less commonly in aggregates.
Marked variation in size/shape, including Caudate and Spindle cells.

NUCLEI
Marked variation in size/configuration.
Numerous dense, opaque forms.
Chromatin (when discernible) Coarsely granular and irregularly distributed. (Parachromatin clearing)
Macronucleoli less common than in nonkcratinizing SCC.

CYTOPLASM
Frequently dense and orangeophilic.

BACKGROUND
Tumor diathesis may or may not be present.

ATYPICAL ENDOCERVICAL CELLS (NOS)

CELLS
Sheets and strips, with minor nuclear overlap.

NUCLEI
May be enlarged, up to *3-5x* normal endocervical nucleus.
Mild Variation in size and shape.
Slight hyperchromasia frequent.
Nucleoli often present.

CYTOPLASM
Abundant
Distinct cell borders often seen.

ATYPICAL ENDOMETRIAL CELLS (NOS)

CELLS
Small groups (usually *5-10* cells).

NUCLEUS
Slightly enlarged.
Slight hyperchromasia may be seen.
Small nucleoli may be present.

CYTOPLASM
Scant (compared with endocervical cells)
Occasionally vacuolated.
Indistinct cell borders.

ATYPICAL GLANDULAR CELLS (NOS)

ATYPICAL GLANDULAR CELLS FAVOR NEOPLASTIC

CELLS
Crowded sheets, strips, rosettes
Sheets of cells with honeycomb pattern lost feathery edges.

Note: A palisading nuclear arrangement with nuclei protruding from the periphery of cell clusters (feathering) is a characteristic feature.

NUCLEI
Crowded, overlapped.
Enlargement, elongation, stratification in most cases.
Variation in size/shape.
Hyperchromasia with fine to moderately granular chromatin.
Mitotic figures may be seen.

NUCLEOLI
Small or inconspicuous.

CYTOPLASM
Diminished with ill defined cell borders.

ENDOCERVICAL ADENOCARCINOMA IN SITU

Conventional Smears

1. Sheets and cluster of tightly packed glandular cells (hyperchromatic crowded groups) with crowding and overlap of nuclei; typical endocervical "honeycomb" pattern is lost.
2. Specific architectural features including: pseudo stratified strips of columnar epithelial cells, epithelial rosettes, nuclear protrusion at group margins (feathering)

is often the most prominent architectural feature.
3. Higher than normal nucleus to cytoplasmic ratios.
4. Nuclear enlargement (75um^2 mean) with pleomorphism of nuclear size and Nuclear irregularity; elongation of nuclei is common.
5. Distinctive coarsely granular, evenly distributed chromatin pattern.
6. Nucleoli are not typically prominent.
7. Mitoses and apoptotic bodies may often be present.
8. Tumor diathesis is not typically present, however an inflammatory background can be present.

Note: Criteria for "Atypical Endocervical Cells" are considered to be the presence of some but not all the criteria as outlined for AIS, or other "atypical" presentation which should be individually and specifically categorized in a qualifying statement.

Criteria which have been shown to be of use in differentiating benign form neoplastic outcomes in cases classified as "Atypical Glandular Cells" are irregular nuclear membranes, atypical single cells, and decreased cytoplasm. (Raab SS, Am J Clin Pathol 1995; 104:574-582)

Liquid-Based Specimens

The following differences from conventional smears are noted. These criteria are representative of the most common form of AIS – other minority morphologic variants exist that show some differences.

1. Hyperchromatic crowded groups become denser and more three dimensional with greater nuclear overlap, increased apparent hyperchromasia of nuclei, and with increased difficulty in visualization of individual nuclei in the grouping.
2. "Disordered honeycomb" arrangement may be the only feature present in some cases.
3. Key architectural features may be more subtle than in conventional smears.
4. Margins of the groups become smoother and sharper with lesser degrees of nuclear protrusion (feathering).
5. Pseudostratified strips of cells are often the most prominent architectural arrangement.

ENDOCERVICAL ADENOCARCINOMA

CELLS
Single, flat sheets, or clusters.
Columnar shape may be retained.

NUCLEI
Enlarged.
Irregular chromatin, parachromatin clearing

Macro nucleoli may be present.

CYTOPLASM
Eosinophilic or cyanophihc.

BACKGROUND
Tumor *diathesis* may be evident.

Note: Abnormal squamous cells may be present representing a co-existing squamous component.

ENDOMETRIAL ADENOCARCINOMA

CELLS
Typically single or small, loose clusters.

NUCLEI
Size, chromasia, and nucleoli increase with grade of tumor.
Variation in size.
Loss of polarity.
Irregular chromatin distribution, parachromatin clearing.

CYTOPLASM
Scant, cyanophilic
Often vacuolated.

BACKGROUND
Watery (finely granular) tumor diatheses.

ADENOCARCINOMA, EXTRAUTERINE

ADENOCARCINOMA, (NOS)

OTHER MALIGNANT NEOPLASMS (SPECIFY)

SATISFACTORY FOR EVALUATION
ENDOCERVICAL/TRANSFORMATION ZONE PRESENT

Indicates that the specimen has all of the following:

* Appropriate labeling and identifying information.
* Relevant clinical information.

* Adequate numbers of well preserved and visualized squamous cells.
* An adequate endocervical/transformation zone component (from patients with a cervix)

Approximately 8-12,000 well preserved and well-visualized squamous epithelial cells should be spread over the slide surface of a conventional specimen. Whereas, a liquid based pap should have a minimum limit of 5,000. An adequate endocervical/transformation zone component should, as a minimum, consist of ten or more well-preserved endocervical and/or squamous metaplastic cells.

This definition applies to all specimens, except in the situation, of atrophy where metaplastic and endocervical cells often cannot be distinguished from parabasal cells, or in postmenopausal women over the age of 60 where the absence of an identifiable endocervical/transformation zone component does not affect the specimen adequacy categorization of a specimen otherwise determined to be Satisfactory for evaluation.

SATISFACTORY FOR EVALUATION ENDOCERVICAL/TRANSFORMATION ZONE ABSENCE

Indicates that the specimen has all of the following:

* Appropriate labeling and identifying information.
* Relevant clinical information.
* Adequate numbers of well preserved and visualized squamous cells.
* Has < 10 endocervical or metaplastic cells or is from a patient without a cervix.

Indicates that the specimen provides useful information; however, interpretation may be compromised. The absence of endocervical/transformation zone component does not necessarily require a repeat smear. Patient factors, such as location of the transformation zone, age, pregnancy, previous therapy, etc., may limit the clinician's ability to obtain an endocervical sample. The ultimate determination of specimen adequacy rests with the clinician who must correlate the findings described in the cytopathology report with the clinical knowledge of the individual patient.

ADDITIONAL COMMENTS THAT MAY BE ADDED

PARTIALLY OBSCURING RED BLOOD CELLS
PARTIALLY OBSCURING INFLAMMATION
PARTIALLY OBSCURING AREAS OF THICK CELLULARITY
PARTIALLY OBSCURING AREAS OF BACTERIAL OVERGROWTH

Partially obscuring blood, inflammation, thick areas, poor fixation, air-drying artifact, contaminant, etc. which precludes interpretation of approximately *50%* to *75%* of the epithelial cells.

UNSATISFACTORY FOR EVALUATION
SPECIMEN REJECTED/NOT PROCESSED (SPECIFY REASON)

A specimen may be unsatisfactory for evaluation...if any of the following apply:

- Lack of patient identification on the specimen and/or requisition.
  - See WI-CYT-002 for further requisition information.

- A technically unacceptable slide or vial is defined as:
  One that is broken.
  Cellular material that is inadequately preserved
  Vial empty or QNS "quantity insufficient".

- Scant squamous epithelial component (well preserved and well visualized squamous epithelial cells).

- All Liquid Based Paps that are acellular should be observed and if clear not repeated and reported as unsatisfactory.

- Other cases that are considered to have scant cellularity should be repeated before being reported as unsatisfactory.

- Obscuring blood, inflammation, thick areas, poor fixation, air-drying artifact, contaminant, etc. which precludes interpretation of approximately 75% or more of the epithelial cells.

***Note: The "Unsatisfactory..." designation indicates that the specimen is unreliable for the detection of cervical epithelial abnormalities**".*

Specimen adequacy is evaluated in all cases. However, any epithelial abnormality is of paramount importance and must be reported regardless of compromised specimen adequacy. If abnormal cells are detected, the specimen is never categorized as Unsatisfactory.