The Bethesda System for Reporting Cervical and Vaginal Cytologic Diagnoses: Report of the 1991 Bethesda Workshop

The Bethesda System (TBS) for reporting cervical/vaginal cytologic diagnoses was developed by a 1988 National Cancer Institute (NCI) workshop convened to consider benefits of increased standardization in the diagnostic reports provided by cytology laboratories.[1] It provides a uniform format for cytopathology reports that is intended to communicate clinically relevant information using standardized terminology. From the outset, TBS was expected to evolve over time in response to advances in understanding of cervical neoplasia and to the changing needs of clinicians and cytopathologists. In the 3 years since its initial publication, TBS has received general support from professional societies and has gained widespread acceptance in laboratory practice.[2] Recognizing the broad impact of TBS, the NCI sponsored a second workshop, April 29–30, 1991, to assess the use of TBS in actual practice and to consider areas for improvement. The following main conclusions emerged:

Changes in Report Format and Diagnostic Terminology

The general format for cytopathology reports was retained; however, minor revisions were proposed. An Editorial Committee was established to revise TBS terminology based on this input as well as written commentaries, scientific data, and laboratory surveys. The revised TBS (Table) has been significantly streamlined and simplified as follows. (A detailed discussion of the rationale for specific changes has been tentatively accepted for publication in *Diagnostic Cytopathology* and *Acta Cytologica*.)

- Under ADEQUACY OF THE SPECIMEN, the phrase "Satisfactory for evaluation but limited by . . ." replaces the previous qualifier of specimen adequacy, "Less than optimal";
- The GENERAL CATEGORIZATION element, which is considered optional, has been expanded to include "Benign cellular changes: See descriptive diagnosis" and "Epithelial cell abnormality: See descriptive diagnosis" rather than the former notation of "Other";
- Within the element of DESCRIPTIVE DIAGNOSES, relatively minor modifications have been made under the headings of both INFECTION and REACTIVE CHANGES;
- Under EPITHELIAL CELL ABNORMALITIES, SQUAMOUS CELL, and GLANDULAR CELL, the diagnosis of atypical cells of undetermined significance is further clarified by emphasizing the responsibility of the cytopathologist to communicate whether a reactive or premalignant/malignant process is favored. The diagnosis of "low grade squamous intraepithelial lesion" continues to include cellular changes of human papillomavirus. The use of "low . . ." and "high grade squamous intraepithelial lesion" remains unchanged.

Development of Uniform Morphologic Criteria

A problem in the implementation of TBS cited at the workshop was the lack of uniform morphologic criteria for evaluation of specimen adequacy and for specific diagnostic terms used in TBS. A Criteria Committee was established to address these issues. This Committee is completing a TBS reference atlas, which includes morphologic criteria and accompanying photomicrographs, to be published soon.

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Table. The 1991 Bethesda System

ADEQUACY OF THE SPECIMEN
- Satisfactory for evaluation
- Satisfactory for evaluation but limited by . . . (specify reason)
- Unsatisfactory for evaluation . . . (specify reason)

GENERAL CATEGORIZATION (optional)
- Within normal limits
- Benign cellular changes: See descriptive diagnosis
- Epithelial cell abnormality: See descriptive diagnosis

DESCRIPTIVE DIAGNOSES

BENIGN CELLULAR CHANGES

INFECTION
- *Trichomonas vaginalis*
- Fungal organisms morphologically consistent with *Candida* spp
- Predominance of coccobacilli consistent with shift in vaginal flora
- Bacteria morphologically consistent with *Actinomyces* spp
- Cellular changes associated with herpes simplex virus
- Other

REACTIVE CHANGES
- Reactive cellular changes associated with:
  - Inflammation (includes typical repair)
  - Atrophy with inflammation ("atrophic vaginitis")
  - Radiation
  - Intrauterine contraceptive device (IUD)
  - Other

EPITHELIAL CELL ABNORMALITIES

SQUAMOUS CELL
- Atypical squamous cells of undetermined significance: Qualify*
- Low grade squamous intraepithelial lesion encompassing: HPV† mild dysplasia/CIN 1
- High grade squamous intraepithelial lesion encompassing: Moderate and severe dysplasia, CIS/CIN 2 and CIN 3
- Squamous cell carcinoma

GLANDULAR CELL
- Endometrial cells, cytologically benign, in a postmenopausal woman
- Atypical glandular cells of undetermined significance: Qualify*
- Endocervical adenocarcinoma
- Endometrial adenocarcinoma
- Extrauterine adenocarcinoma
- Adenocarcinoma, NOS

OTHER MALIGNANT NEOPLASMS: Specify

HORMONAL EVALUATION (applies to vaginal smears only)
- Hormonal pattern compatible with age and history
- Hormonal pattern incompatible with age and history: Specify
- Hormonal evaluation not possible due to: Specify

**Atypical squamous or glandular cells of undetermined significance should be further qualified as to whether a reactive or a premalignant/malignant process is favored.*

†*Cellular changes of human papillomavirus (HPV)—previously termed* koilocytosis, koilocytotic atypia, *or* condylomatous atypia*—are included in the category of low grade squamous intraepithelial lesion.*

Clarification of the Appropriate Use of Recommendations

As originally published, TBS included the directive "The diagnostic report should include a recommendation for further patient evaluation when appropriate." However, no further explanation was provided as to the circumstances in which such a recommendation would be appropriate or about what types of recommendations were expected. The second workshop discussed these questions extensively, and reached consensus on some general guidelines that are consistent with recently published recommendations for surgical pathology reports.[3] Specifically, recommendations included in the cytopathology report should focus on the pathologic problem to be clarified; they should not attempt to direct therapeutic management of the patient. In this regard, the report may include suggestions for additional cytologic or tissue evaluation if a cytopathologist believes this material might assist in reaching a more definitive diagnosis. For example, in the case of an unsatisfactory specimen, the cytopathologist may suggest how a better diagnostic sample may be obtained at the next opportunity. Or, in the case of atypical squamous cells of undetermined significance found in the context of an atrophic smear, the cytopathologist may suggest estrogen therapy with follow-up smear(s) in order to help resolve the diagnostic uncertainty. In addition, a qualifying phrase (eg, "as clinically indicated") should generally be included as part

of any recommendation to emphasize that the recommendation is only a suggestion, since the pathologist may be unaware of other pertinent clinical information. Finally, recommendations are not required, but are included at the discretion of the cytopathologist.

Patient Management Guidelines

TBS does not include guidelines for patient management based on TBS diagnoses. Discussions at the second workshop emphasized the desirability of such guidelines and focused on areas for additional research and clinical trials to resolve certain unanswered questions regarding management of atypical squamous cells of undetermined significance and low grade lesions. Since the results of clinical trials will not be forthcoming in the immediate future, the NCI, in concert with medical and professional organizations, is planning a conference to develop interim guidelines based on current knowledge.

References

1. National Cancer Institute Workshop. The 1988 Bethesda System for reporting cervical/vaginal cytological diagnoses. JAMA 1989; 262:931–4.
2. Davey D, Nielesen ML, Rosenstock W, Kline TS. Terminology in cervicovaginal cytology: The College of American Pathologists interlaboratory comparison program experience. Acta Cytol 1991; 35:650–1.
3. Association of Directors of Anatomic and Surgical Pathology. Standardization of the surgical pathology report. Am J Surg Pathol 1992; 16:84–6.