Commentary:
Enhancing the Pathologist’s Role at Hospital Tumor Boards

Stephen L. Strobel
Department of Pathology, St. Vincent Mercy Medical Center, Toledo, Ohio

Abstract. Recommendations are proposed to enhance the role of the pathologist in the hospital-based tumor conference (tumor board). The modifications focus on two components integral to the conference: the presentation of salient pathologic features of each tumor selected for discussion within the time constraints allotted, and the pathologist’s role as a principal institutional educator with respect to neoplastic processes. Opportunities to utilize conference presentations as a resource in other educational settings are also considered.

Keywords: tumor board, cancer education, pathologists

Introduction

Institutional interdisciplinary cancer conferences, commonly referred to as tumor boards, serve a variety of purposes. Clinicians use them as an open forum to discuss treatment and management options for patients with complex neoplastic diseases [1-5]. Cancer specialists (oncologic surgeons, medical oncologists, and radiation oncologists) offer their expert opinions to achieve the optimal, comprehensive treatment design for each case presented [6,7]. Oncology nurses help to ensure the enrollment of eligible patients into cancer treatment protocols.

Tumor boards also serve in a didactic capacity for the benefit of attending physicians, medical students, nurses, and allied health professionals. Clinical specialists in oncology serve as moderators who guide the presentations and maintain the appropriate focus on the topics to be discussed. Pathologists and radiologists serve subordinate roles, providing selected information in their areas of expertise pertinent to the individual cases.

Materials and Methods

A questionnaire (Table 1) was prepared to obtain input from the personnel involved in the management of the tumor board and from the frequent attendees. The questionnaire was first distributed to members of the hospital Cancer Committee for review, and subsequently at the weekly tumor board conference for attendees’ responses. At the time of the questionnaire distribution, an announcement was made that modifications to the presentation format would be implemented based upon appropriate recommendations and criticisms provided in the questionnaire responses. This exercise qualified as a quality improvement activity for the hospital cancer program according to the guidelines of the American College of Surgeons’ Commission on Cancer [8].

Address correspondence to Stephen L. Strobel M.D., Dept. of Pathology, St. Vincent Mercy Medical Center, 2222 Cherry Street, Toledo, OH 43608, USA; tel 419 251 4534; fax 419 251 3846; e-mail stephen_strobel@mhsnr.org.
Results

Fifty questionnaires were distributed and 24 (48%) were returned with responses. The distribution of respondents was as follows: radiologists 4, allied health professionals 4, primary care physicians 3, internal medicine residents 3, oncology nurses 2, tumor board registrars 2, surgeon 1, oncologist 1, radiation oncologist 1, non-oncology nurse 1, medical student 1, and massage therapist 1.

The length of presentations and the level of detail usually provided in the pathology discussions were deemed appropriate by 24 (100%) and 23 (96%) of the respondents, respectively. Only the massage therapist desired more detailed presentations. The recommended content composition (per case presentation) averaged 1-3 gross pathology photographs, 2-3 histologic photographs, and 1-2 corresponding tables, graphs, or illustrations.

In the “other suggestions” portion of the questionnaire, many responses were commendatory of the existing format, but offered no constructive criticism. Useful recommendations for revisions to the program format included:

- Explanations of the College of American Pathologists (CAP) checklists used to describe and establish the pathologic stage for cancers.
- More discussion of rare or atypical pathologic features of common and uncommon tumors.
- Presentation of a greater number of gross pathology photographs.
- Use of outlines to demonstrate the typical pathologic differential diagnostic considerations for the cancers presented.
- Correlation with appropriate clinical laboratory tests to support the anatomic diagnosis.
- Comments when appropriate of potential precursor lesions to the cancers discussed.

These recommendations were discussed at a monthly meeting of the Pathology Department, and were incorporated whenever possible into the pathologists’ presentations at subsequent tumor boards. One month after instituting these changes, a follow-up evaluation form was given to 10 members of the Cancer Conference Task Force. These members were asked for a critique of the new presentation format (compared to the previous format) using one of these descriptors: inferior, no difference, slightly improved, or significantly improved. Three of the evaluators (30%) regarded the format as slightly improved, and 7 (70%) regarded it as significantly improved.
Discussion

According to the American College of Surgeons’ Commission on Cancer Program Standards, the Cancer Committee of each institution establishes the format and frequency of tumor conferences on an annual basis [8]. At our institution (a teaching hospital), we adhere to the recommended format of a weekly site-focused conference available to the entire medical staff. Designated departments, including diagnostic radiology, pathology, surgery, radiation oncology, medical oncology, and the attending physician for each selected case are notified in writing of the cases to be presented at least 2 weeks prior to the respective conference. Selected physicians with special expertise in the diagnosis and management of particular cancers may also be contacted directly (by phone or office visit) in order to provide the most complete educational opportunity for all attendees. The Hospital Cancer Committee monitors and evaluates annually the cancer conference in regard to frequency, multidisciplinary attendance, number and variety of cases presented, and prospective case presentations, in order to adhere to the Standards of the Commission on Cancer.

Tumor board case presentations at our hospital are introduced with a brief clinical history followed by short presentations (usually 3-5 min) of the relevant radiographic and pathologic findings, with subsequent discussion centered on therapeutic management. The pathology component has traditionally consisted of several projected histologic images whose diagnostic features are highlighted by the pathologist for the audience. Selected descriptive outlines are occasionally also included to augment the presentation. The opportunity to refine the presentation content and expand the role of pathologists at the conferences exists if potentially beneficial elements, which are currently absent or poorly defined, can be identified and addressed.

The major contributions of pathologists at tumor boards are twofold: the demonstration and discussion of the salient gross and microscopic pathologic features that define or impact the diagnosis and stage of the neoplastic processes selected for presentation, and the synthesis of a didactic overview of germane pathologic features that are characteristic of these cancers, extending beyond their basic gross and histomorphologic aspects. The first parameter, which is the traditional role of the pathologist at these conferences, is generally achieved via projected slides to exemplify the principal features of each tumor in a concise, visually illustrative manner. The second parameter provides the pathologist with an opportunity to expand his or her role as a medical educator in the hospital and medical community, particularly for the benefit of residents, students, and physicians in the audience who do not specialize in the diagnosis or treatment of the various types of cancer.

The College of American Pathologists (CAP) checklists for cancer diagnoses can serve as ideal educational tools at tumor boards [9]. Over 40 cancer protocols have been published by the CAP Cancer Committee as guidelines for reporting complete and standardized data for most common types of cancer in every surgical pathology report. Responses from audience members at tumor board conferences have indicated that the explanation of these checklists by the pathologist aids in clarifying their interpretation and utilization in clinical practice, thereby diminishing potential errors and misinterpretations [10-12]. Specific aspects of these checklists facilitate the explanation of parameters specific to the pathologic diagnosis of certain cancers, such as World Health Organization (WHO) grading systems established for many malignancies, the Gleason scoring system for prostatic adenocarcinoma [13], and the Bloom-Richardson system (Nottingham modification) for grading breast carcinoma [14]. Diagrams or tables are used as needed to illustrate these concepts.

The histologic features of cancers presented at tumor boards are an integral and necessary component of the discussion of each pathologic diagnosis. However, audience respondents felt that the focus on histologic characteristics of tumors often exceeded the interest level of many attendees. To address this criticism, we modified our presentations to include a limited number of gross photographs (1-3) to illustrate each lesion (when appropriate), and to discuss the manner in which tissue sections were selected by the pathologist for microscopic examination. Photomicrographs of histologic slides (approximately 2-3) at various
levels of magnification are then shown to exemplify the conspicuous microscopic features of each tumor discussed. The surgical pathology report serves as a guide to summarize these findings and provides a background for additional relevant didactic materials (charts and tables). This approach addresses the key qualities of each tumor discussed and encourages the audience to become more proficient in the interpretation of the nuances of the corresponding surgical pathology report.

Considerable emphasis is focused on the exploration of differential diagnostic considerations for cases that present unusual or atypical histomorphology. This is especially true of cases where the pathologic diagnosis was unsuspected clinically. Recently discussed examples included granulocytic (myeloid) sarcoma presenting as a breast mass; metastatic lobular carcinoma of the breast presenting as an obstructing, diffuse (linitis plastica-type) carcinoma of the stomach; and primary mediastinal synovial sarcoma presenting as a lung mass. The pathologist’s choice of selected ancillary special stains, including immunohistochemical stains, is discussed in detail for these cases to exemplify how the correct diagnosis can generally be obtained from the histologic findings alone. Clinical follow-up, which may help to confirm the diagnosis, is also encouraged.

Correlation with pertinent clinical pathology tests serves to enhance the discussion of the pathologic evaluation of selected tumors and to provide a more comprehensive overview of the pathologist’s role in the diagnosis of neoplastic processes. Frequently discussed clinical pathology tests include: protein electrophoretic identification and quantitation of monoclonal immunoglobulins (paraproteins) in multiple myeloma and lymphoproliferative diseases; flow cytometric immunophenotypic markers characteristic of specific lymphomas and leukemias; and the expanding role of cytogenetic and molecular markers in the diagnosis and prognosis of various cancers.

Consistently expressed interest focused on the pathologist’s perspectives regarding the biologic evolution of malignancy; in particular, preneoplastic processes (lesions). To address this, we are now including a short description of inferred neoplastic precursors in selected cases, as well as the pathologic characteristics used to distinguish the precursor lesions from frank malignancies. In recent tumor boards, prostatic intraepithelial neoplasia (PIN), ductal carcinoma in-situ (DCIS) of the breast, cervical intraepithelial neoplasia (CIN), and high grade glandular epithelial dysplasia in Barrett’s esophagus and colorectal adenomas have been topics of discussion. The roles of genetic predisposition and infectious agents as inducers of some forms of neoplasia will be included with increasing frequency in future presentations.

A record of the pathologist’s presentation at each cancer conference, which includes a brief patient history, the pathologic diagnosis and tumor stage, high quality gross and histologic photographs, and any didactic information in the form of illustrations, graphs, and tables for each tumor discussed, is stored on computer disks (CDs) in the Pathology Department. Photographs of pertinent CAT scans, ultrasound images, and radiographs are provided by the Radiology Department and are incorporated into the records when available. To ensure anonymity, patients are only identified by age, sex, and surgical pathology case number. These presentations, which are made available to the entire medical staff upon request, are popular with medical students during pathology, oncology, and surgical rotations, and with oncology and urology residents who are preparing for board examinations. Selected portions have also been incorporated into other didactic conferences within the hospital.

Tumor boards are used periodically as a forum to increase the awareness in the medical community of certain pathologist-directed cancer educational programs [15,16]. Pathologists in our department present and moderate these programs in community hospitals and at various off-site locations for the purpose of enhancing public wellness and health consciousness. Cancer patients and their families are provided the unique opportunity for direct interaction with pathologists in comfortable surroundings to discuss their cancer diagnoses from the pathologist’s perspective. We use these programs to define technical and potentially confusing medical terminology utilized in surgical pathology reports, and to improve public understanding of pathologists’ contributions to
cancer diagnosis and treatment. Attendance is voluntary and free of charge. The programs have been well received and help to fulfill the component of our hospital’s mission statement focused on patient education.

Acknowledgments

The author thanks Jill Woods for typing the manuscript, Joanne Toth for assisting in preparation and distribution of the questionnaires, and Linda Pepe for helping to establish computerized records of the tumor board conferences.

References