Quality in Surgical Pathology Communication and Reporting

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• ***Context.***—**Communication in surgical pathology is complex and includes multiple facets.**

Objective.—**To discuss different aspects of pathology practice that represent quality communication in surgical pathology.**

Data Sources.—**Literature review.**

Conclusions.—**Achieving quality communication in surgical pathology is dependent on pathologists addressing multiple situations including managing physicians' expectations for turnaround time and ancillary testing, understanding what information is needed to manage the patient at intraoperative consultation and in the final report, assuring adequate report content with the use of synoptic checklist reports, and using report formatting suggestions that aid report comprehension. Finally, the pathologists' availability to answer questions and discuss cases is an important factor in effective communication, including their willingness to verbally report urgent and significant unexpected diagnoses to ensure that important diagnoses are not overlooked.**

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Surgical pathology communication and reporting is a multidimensional process that requires that versatile approaches be addressed fully (Table). First and foremost this has to be consistent with an overall strategy to improve all elements of quality in surgical pathology. The best report in the world is worthless if the diagnosis is inaccurate. Quality in surgical pathology is determined by diagnostic accuracy, report completeness, and timeliness.[1] While diagnostic accuracy is essential to successful communication in surgical pathology, in this article the focus is on the communication aspects of surgical pathology.

The literature on medical errors indicates that communication mishaps are contributing factors in most errors—if not the primary problem—that leads to patient injury.[2,3] In surgical pathology, poor communication has also been shown to lead to diagnostic error and patient harm.[4,5] This article will attempt to address the elements that contribute to successful communication and reporting in surgical pathology. Quality communication, however, includes more than just the actual report; it also includes all other communication with the clinician. Multiple components will be examined including report completeness, communication of urgent and significant unexpected findings, communication during intraoperative consultation, and the importance of report formatting.

PHYSICIAN SATISFACTION WITH SURGICAL PATHOLOGY DEPARTMENTS

Two studies[6,7] have addressed physician or customer satisfaction with anatomic pathology. They demonstrate that anatomic pathology scores lowest on issues related to poor communication including report timeliness, communication of relevant information, and notification of significant results. Customer satisfaction measures a combination of customer expectation and how those expectations are addressed. Measuring customer satisfaction is very sensitive to issues of communication. If a laboratory does not communicate appropriate expectation of report turnaround time, physicians (customers) may develop unrealistic expectations that can never be met by the laboratory. Therefore, a situation is created that can never be fulfilled unless expectations are modified. Laboratories that communicate with physicians about the time needed for tissue processing or additional testing are frequently rewarded with higher scores and an overall better relationship with physician customers. Physicians also frequently convey this information to patients to demonstrate the necessary steps to produce quality information regarding their specimens and the treatment options based on the findings. This also demonstrates that pathologists' communications beyond the surgical pathology report are just as important as the report itself.

REPORT CONTENT AND COMPLETENESS

The most important and consistent product of pathology is the surgical pathology report. Making sure that the reports are formatted well and the content is complete represents the best quality improvements that a laboratory can make. There are published guidelines regarding the general substance of reports.[8] There are also extensive cancer checklist guidelines and other content guidelines, such as recommendations for transplant rejection criteria, to help make sure that the content is complete.[9] Using a synoptic checklist or computer checklist has been repeatedly demonstrated to be superior to free-text reports when it comes to inclusion of mandated elements, with a uniformly consistent product that is more easily understood by clinicians.[10–13]

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Important Elements That Contribute to Quality Communication in Surgical Pathology	
Test Cycle Phase	**Elements of Communication**
Preanalytic	Communication of specimen requirements, specimen turnaround time, and expected delays to help set expectations
Analytic	Intraoperative consultation, addressing the surgeons' information needs
Analytic	Understanding and using uniform criteria for determination of grade and stage of tumors
Postanalytic	Use of synoptic checklists to assure adequacy of reports, particularly cancer reports
Postanalytic	Report format and style elements contribute to report comprehension
Postanalytic	Timely communication of frozen section/permanent section discrepancies
Postanalytic	Timely communication of urgent and significant unexpected diagnoses to ensure that reports are not overlooked

One beneficial aspect of using checklists, which is not always apparent, is that pathologists, in using a uniform system of grading and staging, are forced to learn the current recommendations and definitions for determination of these features. This by itself leads to tremendous improvement in the ability to reproduce the results. As has been demonstrated many times, using specific criteria to grade or stage malignant tumors leads to consistently reproducible results, with a lower likelihood of diagnostic disagreements and fewer corrections.[14–17]

One element that pathologists cannot always control is the clinical information that comes on the requisition. Just as with intraoperative consultation, knowing what information the clinician wants addressed regarding the specimen is key to having a satisfactory report.[17–22] While experience and familiarity with various clinical practices help pathologists address these issues, there is a certain percentage of cases for which no or minimal clinical information is provided. It is certainly easier when a clinician asks a question such as ''rule out amyloid?'' or ''rule out malignancy?'' A pathologist can and should directly address such questions in the report, and clinicians will be satisfied that their concerns are addressed. When no question is present, most pathologists will deal with the specimen from experience and will rule out common problems, but this may not be completely satisfactory to clinicians if they are considering uncommon problems and may result in a follow-up call. Use of available electronic medical records to find out the clinician's needs may circumvent some of these problems. Physicians' offices or outpatient clinics may not have electronic medical record capabilities for their cases. In these cases and other possible situations, a phone call may be necessary for the best result. Pathologists are frequently dependent on clinical information to provide the best morphologic and diagnostic information.

REPORT FORMAT AND STYLE

Four design principles have been identified as useful in the formatting of pathology reports that improve communication of diagnostic information.[23]

1. *Use headlines to emphasize key elements*. The use of headlines is an opportunity to draw attention to the main diagnosis or the most important diagnosis. This works best in the setting of a ''patient-centered report'' in which the most important diagnosis is set apart from other information that further details the disease. This is in contrast with a ''specimen-centered'' report, which lists all specimens and diagnoses sequentially with equal emphasis and in order of submission.

2. *Maintain layout continuity*. Consistency in layout of reports over time helps clinicians identify diagnostic information. Reading a report from a particular institution may be difficult in the sense that clinicians have to go through a mental checklist to determine the information they need. They have to first identify that the report belongs to the patient and then find the information they need to treat the patient. Once they are familiar with the report format, they can quickly glean the patients' identity and go directly to the information they need to use. Introducing a new format requires that clinicians find and learn again where the information is present. Electronic transmission can introduce formatting errors. That is why new electronic data transmission protocols should be validated to ensure that information is accurate and report formatting is not altered.

3. *Optimize information density*. Cognitive psychology research suggests that individuals recognize and retain information that is familiar to them by ''chunking'' this information. In other words, if information is grouped into familiar units, it is more easily understood and retained. Cognitive psychology research also indicates that illustrations or graphic representation of important information are more accurately communicated and stored in working memory than 1-dimensional representations.

4. *Reduce clutter*. Inclusion of nonessential information in the report competes with essential information for the attention of the reader. Reports represent a balance of what is necessary for documentation of the specimen and what is necessary for optimally transmitting the information. Over the years, inclusion of a microscopic description has diminished. While its use was helpful to residents for learning salient features of lesions, the information, with few exceptions, is not necessary for the reader.

INTRAOPERATIVE CONSULTATION

Intraoperative consultation is one of the few areas where pathologists have a direct influence on patient management.[24,25] Key to successful communication during intraoperative consultation is understanding and anticipating the surgeons' needs. Frequently, a specimen is sent for intraoperative consultation with a request for ''frozen section.'' Depending on the specimen and the procedure, this request could be a request for tumor diagnosis, margin assessment, or something entirely different. With time and experience, surgical pathologists tend to come to know what surgeons expect on particular specimens, but this is not always intuitively obvious. Many surgical pathologists take the time to review the surgical schedule. Those with access to electronic medical records can easily look up the surgeon's notes, as well as other elements of the medical record, in anticipation of a potential intraoperative consultation. The surgeon's note frequently will detail the treatment options relative to intraoperative

consultation. When the electronic medical record is not available, it is advisable that pathologists confirm with the surgeon regarding what information they need to address the operative procedure. Successful communication during intraoperative consultation is heavily dependent on meeting the information needs of the surgeon. As to the actual intraoperative consultation, quality communication is best done directly with the surgeon; this may be by phone or intercom, but a direct conversation is ideal. The communication should start with a clear identification of the patient and culminate with the pathologist's satisfaction that the diagnosis is understood. When an intermediary has to be used, pathologists should insist on read-back confirmation or listen in on the message being relayed to the surgeon to ensure that accurate information is conveyed.

Pathologists should document exactly what was conveyed during the intraoperative consultation. Since surgeons typically complete their operative reports later in the day, after completion of the procedure, their documentation may not be as precise or complete as that of the pathologists. Along the same line, when frozen section/permanent section discrepancies occur, they should be discussed directly with the surgeon at the earliest possible time, so that any possible patient management issues can be addressed. This is particularly important if the patient may go on to have a subsequent procedure based on the original frozen section diagnosis.

URGENT AND SIGNIFICANT UNEXPECTED DIAGNOSES

On the basis of the Clinical Laboratory Improvement Amendments of 1988 (CLIA '88),[26] The Joint Commission[27] and the College of American Pathologists' Laboratory Accrediting Program[28] both require that institutions have in place policies for results that may indicate an imminently life-threatening condition. It is recommended that such results be communicated within a defined time period (usually <30 minutes). Within the clinical laboratory this is usually called the ''critical value'' or ''panic value'' policy. In anatomic pathology, a 30-minute window seems pointless, since tissue processing may take up to 24 hours to complete.[29] There is also very little agreement as what constitutes a ''critical'' diagnosis in surgical pathology.[29–31] While intraoperative consultation technically fits the definition of a critical test, this has well-established expectations for communication and turnaround time. Some have suggested that terms other than *critical diagnosis* be used in surgical pathology, such as *urgent and significant unexpected diagnosis*, with a different time frame for communication.

The main reason for establishing a policy for urgent and significant unexpected diagnoses in surgical pathology is to ensure that the written report is not overlooked. Urgent diagnoses refer to situations in which the diagnoses may have an immediate impact on patient care. Example of an urgent diagnosis includes the finding of a serious infection (eg, cytomegalovirus infection) in an immunocompromised individual. Significant unexpected diagnoses should be both significant and unexpected and should rely heavily on pathologists' experience and judgment for identification. An example of a significant unexpected diagnosis is a finding of carcinoma in a uterus removed for leiomyoma. In most of these situations, direct communication with the treating physician is important to ensure that the diagnosis is not overlooked and the patient's management is appropriate.

Most laboratories should have a very small list of urgent diagnoses that are mutually agreed upon between the laboratory and the institution(s) or physician offices served by that laboratory. Examples of significant unexpected diagnoses may be given, but these situations are very dependent on the pathologist's judgment for identification.

Some departments have mutual agreements with their physician customers by which certain types of diagnoses (eg, cancer) or specimens (eg, breast) will always be called to the physician's office. This represents excellent customer care, but should not be confused with urgent and significant unexpected diagnoses and should not be designated as such.

EXPLORING OTHER METHODS OF COMMUNICATION

Electronic means of communication including e-mail, text messaging, and various alert and broadcast systems are all potential media that may be used to deliver surgical pathology results.[32–34] Today, laboratories typically deliver a copy of the report to the medical record (electronic or paper) and a copy to the physician(s) of record (via paper, fax, remote printing, etc) while maintaining a departmental copy (electronic or paper). Patients do not typically receive surgical pathology reports unless specifically requested.

The use of mobile devices to access medical records is expanding as these devices are adapted to health care and electronic medical records with more assurance of security and privacy. Some mobile devices are able to receive alerts that may be used to automate critical results or panic values. In surgical pathology and cytology, it may be possible to use such systems to notify clinicians of important diagnoses that should not be overlooked. Since many diagnoses in surgical pathology and cytology are interpretive and consultative, most prefer that direct verbal communication occur until such time that pathologists have assurance that reports are received and understood by other methods.

CONCLUSIONS

Quality communication in surgical pathology is not so simple as to consist of just dictating a report and delivering it to the surgeon who generated the specimen. To achieve a high level of quality in communication, multiple facets should be addressed. First and foremost, in the preanalytic realm, the laboratory has to communicate clearly and manage how specimens should be collected, fixed, and delivered. Also, expectations should be managed by making sure that clinicians understand turnaround time and laboratory capabilities. Pathologists should also understand clinician expectations for report content as well as the prospect for any additional testing. During the specimen analysis, pathologists should derive and document all the information necessary for the clinician to be able to treat the patient. At intraoperative consultations, pathologists must have a clear picture of the surgeon's expectations for intraoperative management. Postanalytically, timely communication of urgent and significant unexpected findings, including frozen section/permanent section discrepancies, is vital. Finally, the surgical pathology report itself is multifaceted; complex cancer information is best delivered in a synoptic checklist while keeping

in mind important design formatting elements that are optimal for reading comprehension.

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