

## Clarity on the Diagnosis Line (the Devil Is in the Details)

*Dennis K. Heffner, MD, and Carol F. Adair, MD*

The diagnosis line of a surgical pathology report obviously influences therapy and is often critical for proper initiation of same. If the word choice, phrasing, or terminology in the diagnosis is potentially ambiguous or subject to misinterpretation, this could have adverse or sometimes even disastrous consequences. Usually the potential for misinterpretation is a subtle facet of the wording and is not apparent to the pathologist. This discussion aims to help the pathologist become more aware of the types of subtle wording nuances that can be important and we hope to foster the habit of searching for and correcting such potentially troublesome nuances.

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**A** STAIN for mycobacteria is essentially negative.” We recently encountered this sentence in a surgical pathology report and find it a bit peculiar. Since positive versus negative is the *essential* question for a mycobacterial stain, then we suppose the statement could be considered apropos. However, since “essentially” seems to be used by pathologists to connote “approximately” or “close enough for government work,” the sentence begs criticism. Perhaps the inadvertent connotation is “I looked at the slide, but not too hard.” This is a minor example of the numerous instances of questionable or even frankly misleading word choice or phrasing that we encounter in perusing pathology reports of others (and even some of our own sign-outs from the past) in our work as surgical pathology referral consultants.

It seems to us that the diagnosis line on a surgical pathology report is the epitome of a place where word choice is of paramount importance. Obviously, any ambiguity that may lead to misinterpretation by the clinician of what the pathologist intends to convey about the diagnosis can, in some instances, have disastrous consequences. For example:

Specimen: External ear canal biopsy.  
Pathologic diagnosis: Dermal cylindroma.  
Surgeon’s interpretation: Adenoid cystic carcinoma.

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*From the Department of Otorhinolaryngic and Endocrine Pathology, Armed Forces Institute of Pathology, Washington, DC.*

*Address reprint requests to Dennis K. Heffner, MD, Department of Otorhinolaryngic and Endocrine Pathology, Armed Forces Institute of Pathology, 6825 16th St, NW, Washington, DC 20306-6000.*

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Consequence: Patient placed on operative schedule for radical temporal bone resection.

One suspects that if the diagnosis had read “benign dermal cylindroma,” this almost-tragedy could have been obviated. This illustrates our first suggestion for improving the phrasing of surgical pathology diagnoses:

### **I. Redundancy in the Grammar School Classroom: Bad**

#### **Redundancy in the Diagnosis Line: Good**

In elementary or secondary school the teacher often used harsh intonation when our writing could be considered redundant. The teacher’s cry of “REDUNDANT!” suggested that we would surely suffer horrible consequences to our lives if we did not avoid committing this act. It is now time to learn that we do not have to continue to suffer anxiety attacks when we contemplate using a word that might be judged by someone as REDUNDANT. There are many instances in which redundancy is beneficial. Without the many redundant backup systems used in Apollo rockets, it is doubtful that astronauts could have arrived safely on the moon. In writing surgical pathology diagnoses, if there is the slightest chance that using a word that surely seems redundant might conceivably prevent a misinterpretation, use the word. The unqualified diagnosis of “schwannoma” is, of course, understood to imply a benign tumor. However, since there are malignant schwannomas and since it is possible that a clinician would wonder if a given tumor might have any malignant capacity, remove any doubt or chance (albeit admittedly slight) of misconstrual by diagnosing “benign schwannoma.” In two recent instances, a “mixed

tumor” of the parotid gland (in females) was interpreted by gynecology residents as implying a metastatic malignant mixed müllerian tumor. A more frequent and more important example would be the diagnosis of “squamous cell carcinoma.” Unqualified, this is generally understood as connoting some degree of invasive growth, ie, it is not carcinoma in situ. However, we have encountered many instances wherein a clinician or contributing pathologist wants to know whether an invasive carcinoma is present when a lesion is diagnosed simply as “squamous cell carcinoma.” Making the point explicit in the diagnosis line by writing “invasive squamous cell carcinoma” is best.

Our second suggestion for improvement is to ask yourself:

## II. Sure, Your Words Are Crystal Clear to You, But What Do They Mean to Others?

For example:

Specimen: Nasal cavity biopsy.

Surgeon’s comment: R/O inverted papilloma.

Pathologic diagnosis: Consistent with inverted papilloma.

Surgeon’s interpretation (ie, preoperative diagnosis for next operation): Biopsy-proven inverted papilloma.

Consequence: Maxillectomy done, with subsequent revised (true) diagnosis of reactive papillary hyperplasia related to chronic sinusitis.

The term *consistent with* is frequently found as a qualifying prefix for surgical pathology diagnoses. Its meaning in this context seems clear to most individuals we have asked, but interestingly, the meaning can vary from one pathologist to another! More important, the meaning inferred by a clinician can vary from that implied by the pathologist (for survey data that support this contention, see ref 1).

Apparently, the most common meaning assumed by pathologists is akin to the following: “the histologic findings are not completely diagnostic by themselves for diagnosis X, but they are suggestive of it and since the clinical findings strongly point toward diagnosis X, both clinical and histologic findings considered together mean that X is highly probable and the working diagnosis of same seems reasonable.” We recall from our training days a common instance of this type of usage when tonsils were removed from a child for “chronic tonsillitis.” The histologic picture of the tonsils (“lymphoid hyperplasia”) was not significantly different from what the tonsils of any random healthy child would show. In other words, the tonsils in most cases of “chronic

tonsillitis” during the remittent stage are probably essentially normal. Thus, the expected histologic picture of essentially normal tonsils would be “consistent with” the clinical history of chronic tonsillitis. So, rather than possibly instigate some potential legal trouble with the diagnosis of “essentially normal tonsils” (which was indeed the histologic finding), we used the legitimate alternative of “consistent with” chronic tonsillitis. However, the use of “consistent with” in most diagnostic situations can be ambiguous and can result in misinterpretations.

Many pathologists apparently use “consistent with” (c/w) to connote a hedge in diagnosis, ie, they are less than completely certain of the diagnosis. However, most surgeons seem to interpret the phrase as having little or no import and it is essentially ignored.

Some pathologists intend to connote a stronger diagnosis when using “c/w,” ie, the implication being “yes, indeed the histologic findings do support the diagnosis.” But if this is so, what purpose does the phrase serve? Perhaps the purpose is to make a definite diagnosis but to hedge at the same time. A neat oxymoronic trick, if one could pull it off.

If one needs to indicate less than certainty in diagnosis, it is better to use a less ambiguous term. “Suspicious for,” “strongly suspicious for,” “possibly,” “probably” diagnosis X are all better than “consistent with.” “Favor diagnosis X” is phrasing we do not favor. Of the many nuances of meaning of the word “favor” to be found in the dictionary, the closest synonym to the meaning in this context is “prefer” (to like better or best). We do not prefer any of our diagnoses. What we prefer is that our diagnoses reflect the histologic findings and be correct and stated clearly.

The term “compatible with” is often used, apparently with the intended meaning being virtually the same as “consistent with.” However, this is clearly incorrect word usage. The phrase “compatible with” means “capable of existing together with.” Thus, a diagnosis of “compatible with malignant melanoma” means “capable of existing with malignant melanoma”; this could refer to virtually any diagnosis.

It would be interesting to see how effective some of these ambiguous hedge words are if one arrived in court. Although pathologists are seldom sued for malpractice, an aphorism from our former mentor (Vincent Hyams) seems apropos: “How many times would a problem have to lead to the expensive end of a malpractice suit for it to be important? Seems kinda like marryin’ the wrong woman—you only have to do that once and you’ll remember it the rest of your life.”

In discussing the fact that words often do not convey the intended meaning that is so perfectly clear to us, we need to continually remind ourselves of the fact that:

**Corollary IIa: Medical Terminology Is Not Always Perfectly Logical and Clear-cut**

For example:

Specimen: Nasal cavity biopsy.  
 Surgical pathology diagnosis: Transitional carcinoma.  
 Intended meaning by pathologist: Nonkeratinizing respiratory epithelial carcinoma, essentially a variant of mucosal squamous cell carcinoma.  
 Clinician's interpretation: Metastatic carcinoma from urinary bladder.

Some ambiguities in terminology are related to the nature of language itself since we do not construct language using formal Aristotelian logic or Boolean algebra. In addition, the endless biologic variability manifested by all the wondrously multifaceted histopathologic conditions can frustrate our abilities to precisely classify a condition. When we are phrasing a diagnosis, we should always keep in mind the chance that there may arise a terminology-related misunderstanding. If there is even a small chance of such, a little redundancy can be valuable in clarification.

Consider the following list of tumor diagnoses: basal cell carcinoma, basal cell adenocarcinoma, basaloid carcinoma, basosquamous carcinoma, basaloid squamous cell carcinoma, adenoid squamous cell carcinoma, adenosquamous carcinoma, adenocystic carcinoma, adenoid cystic carcinoma, adenoid basal cell carcinoma, and basal cell carcinoma. With such a list, is it any wonder that clinicians can misinterpret or become confused about our diagnoses?

Many commonly used phrases in pathology for which the meaning may initially appear to be perfectly clear may prove to be ambiguous when carefully reconsidered. For example, it may be instructive to ask a dozen of your colleagues the meaning of the word "anaplastic." It is likely that you will get substantially different definitions among the dozen responses. Even more striking will be the differences between any one of these definitions and the one found in a dictionary.

If the meanings of pathologic diagnostic terms can vary among pathologists, certainly the understood meanings of such terms by clinicians will tend to be even more varied.<sup>1</sup> The variations can be sufficient to lead to clinically important misunderstandings. For example, consider a biopsy of the larynx reported by the pathologist as "granulomatous inflammation." A "granuloma"

to the laryngologist is quite different from what is meant by a pathologist. The latter means "a localized, circumscribed collection of epithelioid histiocytes, often with giant cells." To the laryngologist, a granuloma is a clinically polypoid, mottled pink-red soft tissue, often associated with a contact ulcer, which on histopathologic examination is prominent granulation tissue. Perhaps the similarity between the words "granuloma" and "granulation tissue" has contributed to this different word usage, but the point is that the meaning of the word for clinician versus pathologist is quite different.

Even among pathologists the term "granulomatous inflammation" can connote different things and the differences can be important. Some pathologists use the term mainly in its "true" sense, ie, multiple collections of epithelioid histiocytes with or without giant cells (eg, multiple sarcoid-like granulomas). When used thusly, the term is a specific and clinically useful diagnostic appellation; such a diagnosis implies a pathologic process that will have a specific and determinable cause and the list of feasible causes is short. For example, the list will not include Wegener's granulomatosis, which is a multifocal necrobiotic and vasculitic pathergic process that is only vaguely granulomatous and that never produces a sarcoid-like histologic picture.

However, some pathologists use granulomatous inflammation in a much looser ("sloppy") way than for its "true" meaning. In any instance of nonspecific chronic inflammation that includes a few scattered histiocytes (and most certainly if something is found that suggests a multinucleated giant cell), the term "granulomatous inflammation" may be used by some. But how does the clinician know the implied meaning ("true," "sloppy," or "in-between" usage) in a given instance? When a pathologist makes the diagnosis of "granulomatous inflammation," at the very least, the accompanying histologic description or comment should enlarge on the details of the histologic findings in an attempt to make them more clear.

The previous paragraph leads to another suggestion:

**III. If It Is Important, Do Not Just Discuss It; Diagnose It**

In diagnosing granulomatous inflammation, rather than only discussing the specific findings in a comment, it is better also to include important points in the diagnosis line: "Laryngeal biopsy: Multiple non-caseating epithelioid granulomas, most likely infection or sarcoidosis" clarifies what is meant by granulomatous inflammation and makes it very clear to the laryngologist that he or she is not dealing with a "contact

granuloma.” Choose your words and phrasing in your diagnosis to maximally clarify what you have seen in the slides; otherwise, we are not doing our best to communicate with our clinical colleagues and, in occasional instances, we may be begging for a significant error in the inferred interpretation of our diagnosis.

Another example:

Specimen: Lip biopsy (done for possible evidence of Sjögren’s disease).

Surgical pathology diagnosis: Chronic sialadenitis.

Comment: The chronic inflammatory-reactive changes are nonspecific and the features are not those that suggest or support a diagnosis of Sjögren’s disease.

Subsequent note in patient’s chart: “Biopsy-proven Sjögren’s disease.”

Probably most pathologists have had the experience of a case wherein a discussion or comment in a surgical pathology report seems quite clear, but the subsequent diagnosis carried in the clinical records is markedly (indeed, sometimes astonishingly!) different from the truth. (Example: Pathologic diagnosis: Rhabdomyoma. Note in clinical chart: Patient’s diagnosis is rhabdomyosarcoma.) In these instances, it seems that either the comment was not read or was amazingly misread. Such an error or oversight seems less likely to be made if the important features of the interpretation are an integral part of the diagnosis line, eg, “Lip biopsy: Nonspecific chronic sialadenitis, not suggestive of Sjögren’s disease.”

And then,

#### **IV. After Your Diagnosis Line Is Perfectly Clear, Do Not Make It Cloudy in Your Comment**

Although it seems that sometimes clinicians pay only scant attention to comments in our reports, likely they are often read; we have encountered numerous instances wherein a seemingly clear diagnosis becomes ambiguous by the phrasing of a comment. Often a specific “diagnosis X” is stated clearly and unequivocally in the diagnosis line and in the comments will be included the statement “the differential diagnosis of this lesion includes diagnoses W, Y, and Z.” This implies that the diagnosis is not certain and this is at odds with the wording of the diagnosis line. (Other diagnoses that were considered certainly can be listed if it is made clear that these other considerations have been effectively excluded.) The statement “we favor diagnosis X” tends to add similar confusion. “Favor” was disparaged above as a word used in the diagnosis line; it can add the same ambiguity when used in comments.

It may be argued by others that surgical pathology

diagnosis is only a proffered opinion and virtually always lacks scientific certainty; therefore, adding a differential diagnosis list or using a hedging word like “favor” is entirely appropriate. We believe that diagnoses are usually highly reliable and for practical medical purposes can be confidently considered correct and to imply otherwise is a disservice. We have enough confidence in many of our diagnoses to unashamedly pretend that we have “scientific certainty” (whatever that means). When you have a similar confidence, do not degrade your diagnosis with pavid comments.

Confidence in diagnosis leads to our last point:

#### **V. Even If You Are not Absolutely Certain of Your Diagnosis, There Are Instances When You Should Pretend To Be So**

Do not misunderstand. For the vast majority of surgical biopsies that have nonspecific, equivocal, uncertain, or insufficient findings such that a confident diagnosis cannot be made, the diagnosis line should explicitly indicate the nonspecificity, uncertainty, or insufficient nature of the biopsy. There are times, however, when a generous biopsy is surely demonstrating the lesion, all of the relevant special pathology stains and clinical studies have been done, the clinical parameters are known to the pathologist, and yet the diagnosis is still uncertain. Does one say, in effect, “I don’t know” in the surgical pathology diagnosis? Many times, yes, that will be appropriate. Perhaps nonspecific conservative clinical management will be reasonable and with time the diagnosis may become clear or the condition is not serious and may resolve without a definite diagnosis having been made. But what about the patient who clearly has a serious condition that requires serious treatment and for whom temporizing will be harmful or possibly fatal? Usually the clinician will just have to make his or her best guess about patient management with your less-than-confident pathology diagnosis. Sometimes, however, it is reasonable for the pathologist to help the clinician by stating an unequivocal diagnosis when it is clear that treatment for same is in the patient’s best interest. This implies, of course, that the pathologist knows the relevant clinical facts and understands the essentials of treatment options. The pathologist is a medical doctor and the complete surgical pathologist should understand such things; the goal is to do the best for the patient.

For example, the histologic diagnosis of Wegener’s granulomatosis (WG) from a sinonasal biopsy is usually challenging. Sometimes, however, one can be “almost sure” of the diagnosis from the biopsy alone, that is, the

histologic features alone are “highly suspicious for WG.” If, then, it is learned that there is clinical information strongly pointing toward the diagnosis of WG and alternative diagnoses such as an unusual infection have been excluded as well as clinically feasible, would we then diagnose the biopsy as “highly suspicious for WG?” No. With such a diagnostic wording, it is possible that a clinician may temporize in treatment or modify treatment too conservatively because the pathologic diagnosis is not definite. This could be a significant disadvantage for the patient. We would make a definite, unequivocal histologic diagnosis of WG because the clinicopathologic picture indicates that treatment for same is appropriate and important to instigate.

Is it wrong for the pathologist to alter diagnostic wording in an attempt to influence therapy since therapy is solely the clinician’s responsibility? No, because we often cannot avoid influencing therapeutic decisions anyway by the wording of our diagnoses. In the discussed example; diagnosing the biopsy as the less-than-definite “highly suspicious for WG” may influence therapy, but only to the potential detriment of the patient by delaying much-needed treatment. Certainly, coloring diagnoses in an attempt to influence therapy requires our best cautious good judgment, but that is implicit in being a medical doctor.

Consider, for example, a large biopsy from a well-differentiated cartilage tumor in the sinonasal tract of a young person that is either an atypical chondroma or low-grade chondrosarcoma. It has only meager atypia and experienced opinions are that the histologic features are not sufficient to be certain of the diagnosis of grade I chondrosarcoma. It is decided to diagnose the lesion as an atypical chondroma with a strong comment that the tumor probably has locally aggressive growth potential and may even be a low-grade chondrosarcoma and it certainly has to be entirely surgically removed. Since the latter treatment would also be appropriate for a definite low-grade chondrosarcoma, the decision seems reasonable. However, after several recurrences of the tumor, we note that, 3 years after the initial presentation, the preoperative diagnosis for the latest surgery is “sphenoid sinus: recurrent chondroma.” (The atypical, aggressive qualifiers seem to have been lost in the current clinical records.) Even if the lesion is a chondroma, it is a neoplasm and will continue to grow if it is not surgically eradicated. If it escapes surgical control it will kill the patient, either through local destructive growth effects or through change to a higher-grade neoplasm with subsequent metastasis. In general, it has

been our experience that cartilage tumors in the sinonasal tract tend to be undergraded by the pathologist and undertreated by the clinician. If the pathologist had initially pretended confidence (our preference) and the lesion were initially bravely diagnosed unequivocally as a low-grade chondrosarcoma, the surgeon may have been just a bit more aggressive (even if only subconsciously) in the first attempt at surgical removal and may have cured the lesion at that time; a few millimeters at some margin may have made the difference between cure versus possible patient fatality. Making the required treatment maximally clear by not hedging, or backing off from, the most appropriate diagnosis would have been best in this case.

Another example concerns our view of the possible diagnosis of “carcinoma arising in a branchial cleft cyst.”<sup>2</sup> It is not possible to formally prove that carcinoma arising in a branchiogenic cyst does not exist (trying to “prove the negative”). Indeed, it seems unlikely that such never has or never will occur and we cannot claim it is impossible. What we do claim, however, is that branchial cleft cyst carcinoma (if it exists) must be extremely rare compared with the instances of cystic cervical metastases that histologically might suggest branchiogenic carcinoma. Moreover, the histologic features of a hypothetical branchial cleft cyst carcinoma virtually never could be absolutely compelling for the diagnosis of such.<sup>2</sup> Therefore, from a practical clinical standpoint, branchial cleft cyst carcinoma does not exist and a cystic squamous cell carcinoma in the neck that histologically suggests such *must* be assumed to be metastatic from an occult mucosal primary somewhere in the respiratory or upper digestive tracts. The wording of our diagnoses for such carcinomas is not equivocal; we pretend that we have had a divine communication and that we know for certain that the lesion is metastatic. We try to make our diagnoses clear.

We doubt that everyone agrees with all of our specific suggestions for improving diagnostic wording, but if pathologists are hereby stimulated to at least think more about their word choices and pay increased attention to them, this will be worthwhile.

## References

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