Multidisciplinary Discussion (MDD) in Interstitial Lung Disease; Some Reflections

Thomas V. Colby MD*
Michael B. Gotway MD†
Lewis J. Wesselius MD‡

Departments of Pathology*, Radiology†, and Pulmonary Medicine‡
Mayo Clinic Arizona
13400 E. Shea Blvd.
Scottsdale, AZ 85259

Multidisciplinary discussion (MDD) has been used in many disciplines in medicine, notably in thoracic oncology for some two decades (1). MDD at a multidisciplinary conference (MDC) formalizes activities that have also gone under the label of case conferences, tumor boards, etc. and this practice is time-honored in medical practice. In the setting of interstitial lung disease (ILD), especially the idiopathic interstitial pneumonias (IIPs) and IPF MDD conducted by a “multidisciplinary team” (MDT) and is now the “gold standard” for diagnosis in this clinical setting (2) and is recommended in the 2011 guidelines for IPF and the 2013 guidelines for IIPs (3, 4).

Clinical-pathologic correlation, clinical-radiologic-pathologic correlation and clinical-radiologic correlation have been integral to the study of interstitial lung disease since early work of Heitzman (5), Carrington and Gaensler (6) and many others. This represents the conceptual framework on which the Fleischner Society: “…an international, multidisciplinary medical society for thoracic radiology, dedicated to the diagnosis and treatment of diseases of the chest” founded in 1969 (7).

The emphasis of MDD in the setting of ILD derives primarily from the study of Flaherty et al (8). Flaherty et al studied the kappa statistic for intra-observer agreement among expert clinicians evaluating ILD and showed that the kappa significantly improved as more clinical, radiologic and pathologic information was added, suggesting that clinicians had become more confident of their diagnoses with this process.

In theory, MDD results in a consensus diagnosis based on all the appropriate evidence discussed in a single setting allowing a dynamic intercourse and engagement among the physicians involved. It allows the physicians to “look each other in the eye” and assess the confidence in the interpretations presented. It also enables all participating physicians to reassess and change their opinions on the basis of new information and ongoing discussion. Many of the positive aspects of MDD include the following:

- Dynamic interaction with exchange of ideas
• Engagement of the physicians involved; improved self-esteem
• Physicians can gauge the confidence of others’ opinions/diagnoses (e.g., the radiologic or pathologic diagnosis)
• Physicians can reassess and reinterpret their findings and change their diagnoses
• Educational value for involved physicians (for example, surgeons can appreciate the radiologic findings in terms of where to biopsy; pathologists can appreciate the pathologic findings relative to HRCT)
• Educational value for training fellows and junior staff
• Encourages evidence-based approach
• Increased homogeneity and consistency in managing ILD
• Development of a group ethos with associated improved morale
• Continuous feedback regarding diagnoses
• Forum for developing research ideas
• Forum for discussion and recruitment to clinical trials
• Pooled group clinical experience with broad perspective on ILD (for example, radiologic findings inform the pathologic findings and vice versa)
• An MDD diagnosis might be considered a more defensible diagnosis than individuals’ diagnoses
• The belief that collective thought is better than individuals’ diagnoses

As in any human interaction, theory does not always translate into practice and there are number of issues that arise with MDD. Negative and potentially negative aspects of MDD can summarized as follows:

• Physician and allied health staff time
• Physician and allied health staff cost
• Difficulty in coordinating schedules to attend an MDD
• Too many (unselected) cases for discussion
• Lack of a defined protocol and administrative structure for the MDD
• How individual findings should be weighted in terms of final diagnosis
• The effect on the group of individuals’ personalities and stature
• Discourages independence of thought and problem-solving strategies especially for trainees
• Lack of a clear trail as to exactly how a final diagnosis was reached (individual opinions may be lost)
• The “groupthink” phenomenon (to maintain harmony and conformity a group decision may in fact be dysfunctional)
• Over-confidence by the clinician in a diagnosis reached by MDD
• Lack of data on inter- and intra-observer correlation for MDT diagnoses
• When no consensus diagnosis is reached, who is the final arbitrator?
• The phenomenon of “diagnosis drift” (see below)
• The difficulty in validating MDD/MDT diagnoses
• MDD is a luxury of an academic practice and not practical in routine clinical practice
Medico-legal liability of group members for a group decision

The MDD process for ILD has not been uniformly defined. Should this be a free-for-all? Should there be a defined protocol? The algorithm for the diagnosis of IPF in the 2011 guidelines is a good guide (3). To some extent, the observations/opinions presented in an MDD are subjective and thus an MDD diagnosis is simply a collection of subjective judgments. MDD is influenced by individual personalities and there is no question that an “eminence factor” may be at play; a very eminent radiologist may intimidate a relatively inexperienced clinician and the result might be skewed toward the radiologic interpretation. Cultural factors may also be at play since in some societies age and experience are venerated. There are no guidelines if a consensus is not reached, and it would be folly to assume that consensus would be reached after every MDD session. When there is no consensus, who is the final arbiter? We believe the clinician caring for the patient should be the final arbiter.

Participation in an MDD may leads to something that can be called “diagnosis drift.” An example of this follows. The differential diagnosis for IPF includes chronic hypersensitivity pneumonitis, which may show certain radiologic features that suggest that diagnosis. When such cases are discussed in an MDD, pathologists then become sensitive to similar findings histologically and over time, tend to raise the differential of chronic hypersensitivity pneumonitis more often in the absence any validated confirmation of this practice.

How can MDD be improved? Given the time, expense, and logistical issues, we think it is unrealistic to expect a MDD for all ILD or IPF cases and that cases for MDD should selected, particularly those where there appears to be discrepancy between the clinical, radiologic and/or pathologic findings. The availability of an electronic medical record (EMR) allows ready access to medical information that may obviate need for MDD in individual cases, although the give and take of discussion is lost.

An attempt should be made to better define the process and the roles of the participants. We suspect that in most MDDs there is a de facto definition of the process and the roles, but some attempt could be made to formalize this. Some additional suggestions include:

- Be cognizant of the pros and cons discussed above
- Better defined process with roles and leader clarified
- Preselection of cases to improve efficiency; not all ILD cases need to be discussed
- Include only individuals necessary for a given case (efficient use of staff and their time)
- Consider MDD “overreading” by an experienced group since many community practices will not find MDD to be feasible
- Use of teleconferencing
- Record of the MMD process/decisions
- Continuous reassessment and improvement of the MDD process

And as a final thoughts…..remember that an experienced clinician effectively goes through the process of MDD in the clinical evaluation of an individual patient, appropriately consulting radiologists, pathologists, and other colleagues as needed to reach a management decision……but how is that experience gained…?...The educational value of MDD should not be forgotten.

References

7. Fleischner Society Website. [cited 2014 Jul 1]; Available from: http://fleischner.org/

Acknowledgements

The authors thank the Fleischner Society members attending the 2014 Leuven meeting and the following physicians for thoughtful discussion and input: Jeffrey Galvin, David Hansell, David Lynch, Mathias Prokop, Jay Ryu, and Johny Verschakelen.