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Neurology Journal Club

A new subsection

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ABSTRACT

The term “journal club” traditionally refers to a gathering of physicians for the critical review of current medical literature and discussion regarding the clinical application of the results. Since the formation of the first documented journal club over 130 years ago, the organization and purpose of this academic tool has gone through many changes. Despite the advent of “virtual” online journal clubs, most academic departments still employ a physical meeting between trainees and the faculty. The *Neurology*® Journal Club is a new subsection of the Resident & Fellow Section with the goal of enhancing the traditional journal club experience by publishing examples of structured critical appraisals of medical literature. The Journal Club critiques, written by neurology residents and fellows with faculty supervision, will examine each article for key features of hypothesis and design, methods, results, and interpretation. *Neurology*® 2011;77:915-917

Neurology® Journal Club is a new subsection of the Resident & Fellow Section for the publication of structured evaluations of research articles that recently appeared in *Neurology*. The aim is to enhance the training of residents and fellows by instruction in the critical appraisal of medical literature. This online feature should be an adjunct to the traditional journal club and promote academic discussion among neurologists, including trainees and those in practice, within their home institutions.

HISTORICAL BACKGROUND The modern concept of a medical journal club is a regularly scheduled gathering of physicians for the presentation and critical discussion of the clinical application of the results of current research.¹⁻⁴ This traditional structure originated over 130 years ago and has evolved with the changes in medical education and expansion of scientific research. Today, the journal club can help fulfill a variety of core competencies, for instance medical knowledge, system-based practice, and practice-based learning, for resident training programs overseen by the Accreditation Council for Graduate Medical Education.⁵

Rather than a mandated meeting required for successful completion of medical training, early journal clubs were more likely social organizations for like-minded academics to meet and discuss the profession in a relaxed atmosphere. An early reference was written in the memoirs of Sir James Paget regarding the experience at St Bartholomew's Hospital in London from 1835 to 1854. Due to the small reading area at the library, some of the students found a space away from the hospital where they “could sit and read the journals and where some, in the evening, played cards.”⁶ The more formal journal club may have emerged out of a necessity to acquire and process the growing number of medical publications in the 19th and 20th centuries.

The initial use of the term “journal club” appears in the biography of Sir William Osler written in 1926 by Harvey Cushing.⁷ In 1875, Osler organized a group of physicians in Montreal to collectively purchase medical periodicals that he could not afford as an individual. The recorded history of the medical journal club is sporadic over the next hundred years, but there is evidence of the growing popularity of this feature of medical education.³ Neurology journal clubs likely originated in response to the many new journals and neurology specialty societies that developed with the expansion of neurologic research and training programs in the years following World War II.⁸ The “Green Journal” *Neurology* was founded as the official journal of the American Academy of Neurology at this time.

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THE MODERN JOURNAL CLUB The structure of the medical journal club varies between institutions and departments, but several studies have examined the characteristics that make the process successful.^{1,2,4,9–13} A search of the literature reveals articles pertaining to the journal club format for several different specialties, including medicine, radiology, critical care, and surgery. Interestingly, there is none that focuses specifically on neurology. These articles, taken together, provide a solid overview and a basic format of the journal club that may be applied to any medical specialty. One systematic review reports the findings from 12 relevant studies that rate the effectiveness of the health-related journal club.² In addition, there are editorials that describe the experience with journal club in one specialty and at one institution.^{1,4} Questionnaire-based methods are most frequently utilized to examine the specific aspects of journal club organization. The investigators survey residents involved in the journal club at their institution,^{9,11} or the program directors or chief residents of all training programs within their specialty.^{12,13} One randomized control trial compares 2 different journal club formats at a single internal medicine residency program.¹¹ The residents are randomly placed in a journal club led by either a general medicine faculty member or a chief resident with subspecialist guest faculty. Both formats are effective for instruction in methodology of medical literature. The authors point out an interesting finding that the respondents report a change in critical reading habits after attending journal clubs, but do not integrate this into their practice of medicine. Combination of traditional journal club formats with new methods of instruction, such as online medical journals, may increase the clinical application of knowledge that is vital for successful training and the practice of medicine.

Journal club is commonly utilized to help fulfill the criteria for the medical knowledge core competency required by the ACGME. Creative article selection may also introduce other aspects of medicine to trainees, such as health care delivery, ethics, or insurance criteria.⁵ In one article, the medical literature regarding effective journal clubs is systematically reviewed and the key characteristics described.² The main topics include organization and article analysis. Members should have a common clinical specialty. One person should be designated as the leader with the duties of identification of appropriate articles and facilitating discussions. Attendance is improved by making the meeting mandatory, selecting an appropriate time of day, having a regular interval, and, most of all, providing food of some kind. The articles should be distributed to the club members with adequate time for review (approximately 1 week). The

use of a structured analytical tool, such as a checklist or outline, provides clear expectations for preparation. Evaluation should include discussion of the methods and specifically the type of statistics used. The designated leader or faculty member should be familiar with statistics and epidemiology in order to effectively discuss the methods (and statistics) used in the specific articles chosen.² At the conclusion of the meeting, the clinical application of the results should be emphasized.

NEUROLOGY JOURNAL CLUB The articles are selected from the main *Neurology* journal and a list of available topics will be available upon request from the editorial staff to trainees interested in making a submission. Selections will aim to represent the major categories of research methodology over the course of a 3-year residency cycle. The Journal Club critiques, written by neurology residents and fellows with faculty supervision, will examine each article for key features of hypothesis and design, methods, results, and interpretation (appendix). Submissions should follow the outline and contain subtitles. Questions are posed to guide the analysis. Rather than a criticism or editorial, this feature should highlight a method for the critical appraisal of medical literature.

DISCUSSION A journal club can be an effective component of the training program in neurology, a resident's introduction to research methods, and a source of recent advances in the field. The success of the journal club depends on many factors, particularly the timing, the convenience of the meeting place, and the interest and hospitality of the faculty.

AUTHOR CONTRIBUTIONS

Dr. Millichap: drafting/revising the manuscript, study concept or design, analysis or interpretation of data. Dr. Goldstein: drafting/revising the manuscript, study concept or design, study supervision.

DISCLOSURE

Dr. Millichap serves on the *Neurology*® Resident & Fellow Section editorial team and receives research support from the National EpiFellows Foundation. Dr. Goldstein reports no disclosures.

APPENDIX

Outline for *Neurology* Journal Club submissions:

Background and significance

- What is already known on the subject? Provide a brief, 1–2 sentence, summary of the background.
- How does this study add to the available literature? Provide a brief, 1–2 sentence, conclusion.

Hypothesis and design

- What is the research question?
- Is this question relevant? Briefly describe the context of the question.
- Is the hypothesis reasonable?
- What type of study was performed (e.g., randomized controlled, retrospective cohort, case control, or meta-analysis)?
- Is the type of study performed feasible to test the hypothesis?

Methods

- What methods were used?
- Why were these methods chosen?
- What population was studied?
- What was the intervention or exposure?
- What was the control?

Results

- What are the results? Summarize the results relating to the primary research question.
- Are the results valid? Focus on the methods and form of statistics used.

Interpretation

- Discuss the strengths and weaknesses.
- Do the results support the conclusions?
- Does this study change clinical practice?

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