

This Week's Citation Classic

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Carbone P P, Kaplan H S, Musshoff K, Smithers D W & Tubiana M. Report of the committee on Hodgkin's disease staging classification. *Cancer Res.* 31:1860-1, 1971. [Natl. Cancer Inst., Bethesda, MD; Stanford Univ., CA; Roentgen-Radium-Abteilung, Freiburg, Fed. Rep. Germany; Royal Marsden Hosp., London, England; and Inst. Gustave Roussy, Villejuif, France]

The Ann Arbor staging system for Hodgkin's disease, developed in 1971, remains the currently accepted schema for comparing results on therapy and staging for most institutions treating patients with lymphoma. [The SCJ® indicates that this paper has been cited in over 980 publications since 1971.]

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"In July 1971, the American Cancer Society and the National Cancer Institute convened a meeting of investigators to update the status of Hodgkin's disease. A previous meeting held in 1965 at Rye, New York, was to be reviewed and new ideas proposed. The past six years had seen a marked change in the diagnosis and staging of Hodgkin's disease. As part of the conference, a subgroup, consisting of the authors, met to revise the Rye classification.¹ Some of the changes in Hodgkin's disease concepts of staging included the usefulness of surgical staging, including laparotomy, the more widespread use of extended field radiation therapy, and the proof that combination chemotherapy could cure Hodgkin's disease.

"At that time, some authors were reporting results where only clinical staging was used while others did an extensive surgical staging with biopsies and even laparotomy. Thus, there was no

way to clarify the meaning of stage if the staging procedures were not described. Another issue revolved around the demonstration of Musshoff that apparent parenchymal involvement, such as bone and/or lung if a clear extension from adjacent lymph nodes, was treatable with X rays and had the same prognosis as nodal disease.² This has led to the concept of E disease and has been used extensively. While attributable to the Ann Arbor classification, the E category is implied but never mentioned.

"The second major contribution of the Ann Arbor system was to allow the characterization of surgeon staging as pathological staging (PS). Thus, one could really define patients by their clinical stage (CS) or pathological stage (PS). Results could be compared across studies on either basis. An interesting discussion occurred over the initials used to designate involvement of other organs. The 'S' category has become widely adopted. The dilemma came over the use of 'L' for lung and then what to use for liver. The designation of 'H' was suggested. In the literature, the initials, except for 'S,' are rarely used.

"The third change that occurred with this schema was the dropping of pruritus from B symptoms. This has become well accepted.

"Although the above classification was intended for Hodgkin's disease only, the same classification is regularly used in non-Hodgkin's lymphoma. There has not been any major change in the classification except that some institutions use a III and III₂ to describe the extent of disease below the diaphragm.³ Thus, the publication is still referred to in most papers that involve Hodgkin's disease therapy or staging."⁴

1. Rosenberg S A. Report of the committee on the staging of Hodgkin's disease. *Cancer Res.* 26:1310, 1966. (Cited 330 times.)
2. Musshoff K. Prognostic and therapeutic implications of staging in extranodal Hodgkin's disease. *Cancer Res.* 31:1814-27, 1971.
3. Desser R K, Golomb H M, Ultman J E, Ferguson D J, Moran E M, Griem M D, Vardiman J, Miller B, Oetzel N, Sweet D, Lester E P, Kitzke J J & Blough R. Prognostic classification of Hodgkin's disease in pathologic stage III, based on anatomic consideration. *Blood* 49:883-93, 1977.
4. Aisenberg A C. Current concepts in cancer: the staging and treatment of Hodgkin's disease. *N. Engl. J. Med.* 299:1228-32, 1978.