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# This Week's Citation Classic

**Mayock R L, Bertrand P, Morrison C E & Scott J H.** Manifestations of sarcoidosis: analysis of 145 patients, with a review of nine series selected from the literature. *Amer. J. Med.* 35:67-89, 1963.
[Pulmonary Disease Sect., Dept. Med., Hosp. Univ. Pennsylvania and Univ. Pennsylvania Sch. Med., Philadelphia, PA]

The manifestations of sarcoidosis in 145 patients with generalized proved sarcoidosis were described and compared with other series making a combined group of 1,254 patients. The groups were analyzed with respect to background data, symptoms, frequency and type of organ involvement, laboratory findings, and mortality. Although marked differences were noted among the groups, when combined, a reasonably representative picture of the manifestations of sarcoidosis was presented. [The *SCI*® indicates that this paper has been cited in over 270 publications since 1963.]

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"After completing my medical training in internal medicine at the University of Pennsylvania, I became interested in pulmonary disease and took over a group of patients with sarcoidosis who had been diagnosed throughout the various parts of the medical complex. Although patients with sarcoidosis were reported since the days of Hutchinson,[1] the cases were not recognized as being of a common pathology until the work of Caesar Boeck,[2] as well as others, brought all the different entities together as a combined disease—sarcoidosis. Since the disease is uncommon and is so protean in its manifestations, it was apparent that most of the literature was devoted to case presentations or isolated organ system studies with little emphasis on the whole disease picture.

"As our own cases accumulated, we felt that a summary of the disease was overdue and that it should also include the previously reported larger series in the literature for comparison.

"The selection of series to be reviewed presented a major problem. Diagnostic confusion existed and still exists with diseases such as lymphoma, tuberculosis, and the systemic fungi; therefore series were chosen that consisted of only proved cases that were large enough for analysis. The smallest series was 28 cases.

"In reviewing the authors' descriptions of the source of their case material, a tremendous diversity was noted. Patients available to them ranged all the way from relatively asymptomatic young individuals found during X-ray surveys to clinically ill individuals referred for therapy (Massachusetts General Hospital, Johns Hopkins Hospital). Our own series was of the latter group. Since sarcoidosis is ten to 15 times more common in blacks, racial ratios added to the diversities found in the analyses. It was our hope that combining the disparate series would give a composite picture of the disease and that individual variations due to the above factors could be analyzed or eliminated.

"I believe that our study achieved these goals and over the years has served many specialties and subspecialties as a basis of reference for the frequency of manifestations in their particular area. The frequencies of occurrence have held up well on the whole except for the tracheobronchial tree where newer diagnostic measures, i.e., fiberoptic bronchoscopy and multiple biopsies via this route, have revealed a 15-20 percent incidence of involvement compared to no bronchial involvement found in the collected series. This probably reflects the lack of extensive changes and also the hurried examination required during straight bronchoscopy which resulted in the missing of very small lesions.

"Our major production problems consisted of interpreting the descriptions in the nine reported series and reducing them to numbers that could be tabulated. We spent many hours at this task as well as the cross-checking of tabulations to be sure that the series were correct on the multiple tables.

"I believe our study has been extensively quoted because we achieved our goal of a composite picture of the disease. Thus, our data serve as a starting point for many of the specialty areas of medicine when researchers begin describing and analyzing their own patients with sarcoidosis.

"I am not aware of an equivalent effort since our original report, probably due to the difficulties noted by us here. Perhaps our review was sufficiently well done so as to not warrant repetition.

"Recent studies of the disease have centered around disturbances in the immune system and their relationships to sarcoidosis.[3] At the moment, this approach appears to be the most fruitful in the development of a better understanding of this disease of unknown etiology."

1. **Hutchinson J.** Anomalous disease of skin of the fingers, etc. (papillary psoriasis?). *Illustrations of clinical surgery*. London: Churchill, 1875. p. 42-3.
2. **Boeck C.** Nachmals sur Klinic und zur Stellung des "Benignen Miliarlupoids." *Arch. Derm. Syph. Wein* 121:707-41, 1916.
3. **Daniele R P, Dauber J H & Rossman M D.** Immunologic abnormalities in sarcoidosis. *Ann. Intern. Med.* 92:404-16, 1980.


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