

Biographical Sketch

James Stephen Ewing, MD (1844–1943)

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Abstract This biographical sketch on James Ewing corresponds to the historic text, *The Classic: The Modern Attitude Toward Traumatic Cancer* (1935), available at DOI [10.1007/s11999-011-2235-x](https://doi.org/10.1007/s11999-011-2235-x).

James Stephen Ewing was born the third of five children on Christmas Day, 1866, to an influential Pittsburgh family [1, 4]. His father was a prominent judge. When he was 14, he suffered from osteomyelitis of the femur, and spent the better part of several years at bedrest [4]. He was tutored during that time, learned to use a microscope (perhaps influencing his later choice of career as a pathologist), and entered various competitions to entertain himself. He attended Amherst College, receiving an AB in 1888. Ewing then studied at the College of Physicians of New York, where he developed his interest in pathology, and received an MD in 1891. He served as an instructor in histology from 1893 to 1897, then in clinical pathology from 1897 to 1898. Ewing volunteered for the US Army in 1898 during the Spanish-American War, treating many soldiers returning with malaria from Cuba and the Philippines. In 1899, he was appointed the first professor of pathology at the Medical College of Cornell University. His appointment allowed him access to the research laboratories of the New York Memorial Hospital (now Memorial Sloan-Kettering Cancer Center).

In mid 1900 he married Catherine Halsted. A son, James, was born in 1902, but his wife and unborn second

child died in 1903 [3]. According to one source [4], the experience of these losses “evoked reclusive and eccentric tendencies in Ewing’s personality.”

Among his early experimental findings, published in 1906, was the transmission of lymphosarcoma from one animal to another by coitus [2]. He co-founded the American Association for Cancer Research in 1907, and became President of the Medical Board of the General Memorial Hospital for the Treatment of Cancer and Allied Diseases (the name of the institution evolved, as is the case with many such hospitals) in 1931. He worked there until his retirement in 1939 [1].

In a seminal article, he described an “endothelioma” of bone which now bears his name [5]. (The article was republished as a Classic in *Clinical Orthopaedics and Related Research* in 2006 [8].) Ewing commented, “For some years I have been encountering in material curretted from bone tumors a structure which differed markedly from that of osteogenic sarcoma, was not identical with any known form of myeloma, and which had to be designated by the vague term ‘round cell sarcoma’ of unknown origin and nature.”

His prominence as a pathologist and researcher cannot be overstated. Peltier stated, “He...is remembered as one of the leaders in the fight against cancer during the first half...” of the 20th Century [8]. Ewing was an early advocate of radiation therapy for cancer, perhaps related to his sense of the dismal experience with surgery [6]: “Only two definite epochs appear in the history of cancer therapy. One began with the Ancients and continued, practically unchanged in its conception, until the beginning of the twentieth century. Its principle consisted of the complete removal of all cancer tissue, and for this purpose reliance has been mainly on the knife...As for the results, and the capacity of this therapeutic method to cope with cancer, few will deny the verdict is ‘unsatisfactory.’”

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Fig. 1 James Ewing is shown as a young man.

In the article we republish here, Ewing, in 1935, examined the role of trauma in causing malignancy [7]. Until that time, trauma had frequently been considered a causative factor. Ewing commented, “Recent knowledge merely demands that the evidence favoring trauma must be scrutinized more closely and great importance must be given to other factors which are more in line with the known effective exciting causes of neoplasms.” Such a consideration of traumatic causation might seem peculiar to us given the present understanding of the role of biology in most tumors, but that was not the case in 1935. Ewing approached his examination from a legal point of view: what evidence might be considered in a court of law (where the issues were remarkably similar to today’s cases). He elucidated five principles: (1) authenticity and adequacy of the trauma; (2) previous integrity of the wounded part; (3) tumor arising at the point of injury; (4) reasonable time limit between injury and appearance of tumor; (5) positive diagnosis of tumor. For example, regarding the first principle he stated, “The trauma must be adequate to produce some alteration in the structure of the tissue and the least effect it can give is rupture of small blood vessels with hemorrhage and discoloration of the skin. It should also be capable of exciting some regenerative process, otherwise it is difficult to conceive how it can excite excessive and abnormal proliferation of cells.” He addressed the issues of whether trauma could aggravate malignancy, whether trauma could initiate metastases, and whether certain types of cancers, particularly bone tumors, might have been particularly susceptible to a traumatic causation. He concluded



Fig. 2 James Ewing is shown at work with his microscope (Reprinted courtesy of Medical Center Archives of NewYork-Presbyterian/Weill Cornell).

that single instances of trauma could not cause tumors, and only in cases where there was delayed healing due to infection or chemical irritation, that is an exaggerated healing response, could there be an indirect relationship. Altogether, the paper reflected Ewing’s well-reasoned approach to examining a problem.

According to Zantinga and Coppes [9], Ewing commented, “It is a growing conviction that to know cancer in man, one must study the disease most carefully in the human subject. Personally, I do not look for any startling advances or sensational discoveries, since it is much more likely that a steady reduction in the mortality from cancer will come chiefly from a large number of separate factors, of which the most significant appear to be increased control of the conditions leading to cancer, more general recognition of the preliminary stages of the disease, early diagnosis, and treatment of the established disease. From the consideration of these various functions of the modern cancer research hospital, I think that it must be evident that such an institution not only can justify its existence, but fills a very urgent need without which, progress of cancer research would be handicapped, and much relief that might early be extended to cancer victims would be unavailable. Nor is there any doubt that the function of supporting such an institution is properly exercised by the State, which support should be continuous and liberal.”

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