Priority for radium therapy of benign conditions and cancer

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ABSTRACT

In medicine, assigning priorities for original ideas and for first implementation of a new type of treatment or technology—radium afterloading, for example—is often difficult. This situation is certainly true for radium therapy, with conflicting claims coming from France, Germany, and the United States about who first implemented it. Moreover, if possible, a distinction must be made between the person who had the idea for a therapy and the person who actually implemented it. These people are not always one and the same. Difficulties in assigning priority also sometimes arise from the lack of a published claim in a medical journal, and extant photographic evidence is typically almost impossible to find some 100 years after the event. The present article tries to solve the problems of priority regarding those who were really responsible for the ideas and implementation of radium therapy, including the technique of afterloading.

KEY WORDS

Radium, benign tumours, cancer, afterloading

1. INTRODUCTION

This article investigates priority claims for radium therapy with the aim of being able to cite literature sources in answering the following questions:

- Who first had the idea for radium therapy?
- Who first implemented radium therapy for benign skin diseases?
- Who first demonstrated a radium therapy cure for skin cancer?
- Who first proposed and implemented radium afterloading?

These questions are not as easy to answer as are those concerning the dates for the discovery of radioactivity by Becquerel and of radium by the Curies. What is even more difficult is to prioritize the use of radium therapy for specific body sites. Those priorities can usually be only a matter of guesswork from secondary sources such as textbooks on radiotherapy in the first decade of the twentieth century. The primary sources quoted are often in obscure journals that very few medical libraries possess—or they are not mentioned at all.

2. X-RAY THERAPY AS A PRECURSOR TO RADIUM THERAPY

The obvious precursor of radium therapy is X-ray therapy. Therapy using X-rays for skin conditions and diseases had already been demonstrated by the end of the nineteenth century, and unintentional skin burns had been observed.

Leopold Freund in Vienna is generally accepted as having been the first to use X-rays logically and scientifically within the limits of the age. His patient, a 5-year-old girl with a hairy nevus 36 cm in length, started treatment on November 24, 1896—X-rays having been discovered only 12 months earlier, on November 6, 1895. After successful epilation, an X-ray ulcer persisted for about 6 years, but it was considered to be cured in 1902 when only a scar remained. This patient was followed up when she was 75 years of age; apart from back pain, she was found to be in good health at that time [1–4]. This epilatory effect of X-rays established them as a direct agent for producing biologic change.

Evidence for the harmful effects of X-rays had become known within a few months of their discovery. Thomas Edison [5] reported in March 1896 that his eyes were sore after he experimented with X-rays. Radiation burns to hands were reported [6] in the *British Medical Journal* in April 1896; and, in February 1897, in the *Bulletin of the Johns Hopkins Hospital,* a review [7] was given of 23 cases of X-ray injury reported in the literature before January 1897. Thus, by the time of the discoveries in 1898 of polonium [8] and radium [9] by Pierre and Marie Curie, the effects of X-rays on the skin were well known.