X-Rays: Their Discovery and Bitter Contestation

Introduction and Objectives: One of the most important discoveries in physics with immediate application to medicine was the discovery of the X-ray.
Materials and Methods: A review of the historical experiments and ideas.
Results: That light was corpuscular had been overturned by the discovery of wave properties of heat, light and radio waves. Maxwell proved theoretically that regular oscillations of electricity and magnetism travel from rapidly changing electrical discharges with the speed of light. In 1867 this unifies light and radiation.
Roentgen

- Took a vacuum tube covered with black card, attached to an induction coil, found no light passed through;
- Noticed a fluorescent glow nearby, a new form of radiation;
- Something was emanating from the tube and penetrating the card and the air much further than cathode rays could;
- "the transparency of various substances of equal thickness depends on their density";
- Move in straight lines, neither reflect nor refract nor polarize;
- Follow the inverse square law relative to distances between screen and discharge tube;
- They are entirely different from cathode rays;
- Penetrate feet not inches;
- Cannot be deflected by magnets;
- "biologists and physicians, especially surgeons will be interested in the ray as it may open new trails in diagnosis";
- "one is able to determine the extent of complex bone fractures and the position of foreign bodies".

Lenard
"Roentgen was the midwife at the birth of the discovery. This helper had the good fortune to present the child first. She can only be confused with the mother by the uninformed who know as little about the procedure of the discovery . . . as children of the stork . . . I am the mother of the X-ray . . . just as a midwife is not responsible for the mechanism of birth, so is Roentgen not responsible for the discovery of X-rays which merely fell into his lap. All Roentgen had to do was push a button, since all the groundwork had been done by me"
Conclusion: The discovery and use of X-rays is one of the most significant in medicine and was bitterly contested at the time.