Research article

History of radiology applied to orthopaedic

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Abstract:
Radiology is a medical specialty that uses imaging to diagnose and treat diseases seen within the body. A variety of imaging techniques such as X-ray radiography, ultrasound, computed tomography (CT), nuclear medicine including positron emission tomography (PET), and magnetic resonance imaging (MRI) are used to diagnose and/or treat diseases. Interventional radiology is the performance of (usually minimally invasive) medical procedures with the guidance of imaging technologies. We report the history of radiology in orthopedic.

Keyword: History, radiology, radiography, Marie Curie.

Introduction
The X-ray is the oldest and most frequently investigation used to diagnose bone fractures and make post-treatment controls in all districts of the human skeleton. The method is also useful in the diagnosis and monitoring of degenerative diseases such as osteoarthritis. The study of anatomy and pathology of the human skeleton was the RI has suffered and still suffers an overwhelming development and a rapidly changing thanks to technology and the availability of increasingly sophisticated materials and dedicated.

The birth of radiography and radiology
Obey the imperative of absolute radiogram which is lord of diagnosis and treatment
V Commandment Vittorio Putti

1894 was the year that marked his career in Röntgen research; at that time, after the discovery of cathode rays, which took place in 1876 thanks to the German physicist Eugen Goldstein, this argument became the subject of much debate in scientific circles, as it was still uncertain nature of the rays themselves. Röntgen decided to take his studies in the field of cathode rays to verify the conclusions that were reached by the German physicists Heinrich Hertz and Philipp Lenard, and to realize his plan to create his laboratory of the most cutting-edge tools, such as a coil induction for electric current, generating eight pulses per second of about 35000 volts.

It should be emphasized that, because of his color blindness, Röntgen completely darkened the room during his experiments; the evening of the discovery he noticed that a piece of paper on which was written the letter "A" with a barium solution platinocyanide glowed with light, emitted by invisible rays from the vacuum tube with which he was working. In an attempt to discover the qualities of the rays, he noticed that on the sheet appeared the shadow of the bones of his hand placed in the path of the rays themselves, and noticed that these rays, called "X" as unknown, stemmed from contact with the spokes cathode with the anticathode in the tube (8 November 1895). Later he realized that by inserting an object between the emitter of the rays and a photographic plate it was possible to obtain fixed and storable images. After a few days his wife Bertha lent herself to hold his hand on the plate for a fifteen minute period, resulting in the famous prototype of bone X-ray of his left hand with ring. In the 28th of December in 1895, Röntgen distributed the report of his discovery to the Society of medical physics of Würzburg and in a few days the news became public thanks to the prominence of the international press. The military medical world quickly realized the importance of radiology and the use of X-rays The first use in traumatology of X-ray in war was in Naples in 1896 on two soldiers to found in the body the bullets received during the first war in Abyssinia. In 1898 its use was adopted by the US military forces during the Hispanic-American War. There was also visible the first radiologic problem: the mortality due to burns and skin necrosis for the intensity of the emanating rays. In 1899 in Missouri William Smith tried through cadaveric studies tried to realize angiography through Röntgenscopes.

The war radiology Marie Curie

"In theory, women trained at the Radium Institute should have served as doctors' helpers, but many of them have proven to be capable of working independently." - Marie Curie

Marie Curie born in Warsaw, daughter of WladyslawSklodowski (1832-1902) and BronislawaBoguska (1834-1879); in Poland, he began his studies with his father, a self-taught, then continuing them in Warsaw and finally at the University of Paris Sorbonne, majoring in chemistry and physics. Maria was the first woman to teach in the University of Paris. At the Sorbonne she met another instructor, Pierre Curie who later married. She won two Nobel prizes one in physics for his study of property of the radio in 1903 and another for chemistry in 1911. Before Professor at the Sorbonne and the first woman to have the honor of being able to rest his remains to the Pantheon on her own merits.

Marie Curie during World War was called by the French Ministry of War to request opinions to set up medical stations and radiology at the front. Marie Curie very grateful to her second country went beyond the requirements of the Ministry of War. Curie began in train qualified personnel as she could not be present alone in the 20 mobile stations of X rays that had established, nor in 200 fixed units. In 1916, Marie has started to train women as radiology assistants offering courses in techniques required at the Radium Institute. She was assisted by his daughter Irene, who was also enrolled as a student at the Sorbonne.

Curie turned her attention to the creation of a military service radiotherapyonc she advanced radiology services,. In 1915 Paris seemed that it could not take by the Germans. After retrieving the gram of radio from Bordeaux, Curie began to use a technique pioneered in Dublin to collect radon - a radioactive gas that emits radio constantly. Working alone, without protecting herself adequately from radioactive vapors, she used an electric pump to collect the gas at 48 hour intervals. She closed radon in thin glass tubes about one centimeter long, which were delivered to civilian and military hospitals. Thus medical doctors collected tubes in platinum needles and placed directly inside of patients1 bodies, at the exact point where the radiation would be more effective to destroy diseased tissue.

So many writings were written during the war, in one of them Curie said: "The history of radiology in war offers a striking example of unsuspected magnitude that the application of purely scientific discoveries can take under certain conditions. The X-rays have only had a limited utility until the time of the war ... such a development has taken place in radio therapy, the medical uses of radiation from radioisotopes. " - Marie Curie, Radiologyn war

The war ended on 11 November 1918, but the work connected with Curie went on for almost the following year. During the spring of 1919 she offered radiology courses to a group of American soldiers who remained in France,
awaiting the return home. That following summer she summarized much of her work during the war in a book entitled Radiology in War. After the war experience she decided that she would devote most of the rest of his life to it.

The future of traumatology: Interventional Radiology.

At the basis of the procedures in vascular interventional radiography there is a radiological technique called angiography. Already in 1899 William Smith, he tried to find a method to treat the traumas of vessels in a closed manner from his studies of corpses and due to some unsuccessful attempts angiography was abandoned. In the 1950 ‘angiography came back into vogue with the Sweden Seldinger. During performing angiography the most frequent access is currently the femoral artery puncture, according to the Seldinger technique developed in the ‘50s. Historically, other authors like Judkins and Sones must be mentioned for innovations in percutaneous approaches and the development of angiographic techniques.

In 1964, Dr. Charles Dotter for the first time in the history of the interventional radiology treated fortuitously an iliac artery stenosis simply by wiping of progressively larger catheters to perform cerebral angiography. The female patient realized that, after 24 hours, the lower limb claudication had been resolved and that she could walk without any problem, with healing after a few weeks.

In Italy, the first procedure of embolization was performed in 1972, when in Rome was treated for the first time abdominal hemorrhage in a policeman hit in a shootout. Through angiographic catheters bleeding artery was infused with pitressin and embolised with autologous clot. Thereafter the interventional radiography has become a common practice in bleeding traumas of the pelvis.

Iconography essential
Rontegenlaboratory

First xray of the hand of Bertha Röntgen

WONDERFUL NEW RAY SEES THROUGH HAND!

Commercial and wacky xray uses.
Xray property to dry dishes

Figure 21
Radiograph taken during Spanish-American War (1898). The quality is poor by today’s standards, but the radiograph probably served its intended purpose.

Figure 22
Radiation injury to the skin of a Spanish-American War soldier as a result of an x-ray examination (1898).
Curiespouses

Marie Curie driving ambulance
Angiography of pelvis

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