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High Quality Diagnosis Using X-Rays in Medicine

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Abstract: Today, X-ray machines have not lost their relevance in diagnosis and treatment. X-rays are not available, especially in the diagnosis of lung disease, bone fractures and dental disease. Without this type of research, a person can only be miraculously healed. X-rays allow to obtain a very good graphical image of anatomical structures.

This will help to make an accurate diagnosis and prescribe treatment. In medicine, the indications for radiography are to diagnose various diseases, to determine the shape of these organs, their location, the condition of the mucous membranes and peristalsis.Our main goal is to consider the benefits, harms and, of course, the disadvantages of X-rays.

Keywords: A brief history of X-rays, radiography, radiograph, radioscopy, Fluoroscopy, fluorography, electrocardiography, radiation damage

Introduction:

A Brief History X-rays were discovered in 1895 by Wilhelm Conrad Roentgen (1845-1923), a scientist at the University of Würzburg. These rays are also a type of electromagnetic spectrum, such as visible light, gamma rays, radio waves, microwaves, infrared, and ultraviolet radiation. X-ray examination of human organs is the simplest and can be performed in any X-ray room. We will consider common methods together.

The goal:

Popular, classical methods begin with radioscopy and radiography. In many cases, radioscopy provides diagnostic information about the function and morphology of the organ being examined. The test begins with a general observation on the screen, followed by the use of a contrast agent. Radioscopy is usually performed in conjunction with radiography. X-ray - a method of obtaining an X-ray.

The radiograph has a clear image and information. Pictures can be targeted or shared. The method of fluoroscopy is to obtain an X-ray image on a fluorescent (fluorescent) screen on a direct negative principle.

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Significant disadvantages of fluoroscopy include high radiation to the patient and the examining physician, as well as the need to perform the procedure in a dark room. There is also a method of fluorography, which is based on taking a full-length shadow X-ray image from a fluorescent screen to the film.

Electroradiography is a method of obtaining a diagnostic image by transferring it to paper on the surface of a selenium plate, not on an X-ray film.

Instead of a film, a plate charged with the same static electricity is used, and it is discharged differently depending on the amount of ionizing radiation falling on different points on its surface. Finely dispersed coal powder is unevenly distributed on the plate surface according to the laws of electrostatic attraction. A writing paper is placed on the plate and the image is transferred to the paper as a result of the sticking of charcoal powder.

Selenium plate can be reused. The technique is fast, economical, does not require a dark room. In addition, selenium plates in the uncharged state are insensitive to the effects of ionizing radiation and can be used when operating under conditions of rising radiation background. The advantages of electroencephalography are:

1) Cost-effectiveness (cheap paper, for 1000 and more shots);
2) Image capture speed - only 2.5-3 minutes;
3) All studies are conducted in a dark room;
4) The "dry" nature of the image capture (hence abroad electroradiography is called xeroradiography - Greek xeros - dry);
5) Electroencephalograms are much easier to store than X-ray films.

In general, the main advantages of X-ray examination are the availability of the method and its simplicity. Indeed, in the modern world, there are many institutions where we can do X-rays.

This basically does not require any special training, cheapness and the availability of images that can be consulted by several doctors in different institutions.

When we talk about the methods of accurate diagnosis in medicine using X-rays, even the smallest dose of these rays can harm the human body.

When making a diagnosis, the radiologist wears special clothing with lead inside to prevent radiation. The rays also cause a small amount of damage to the patient being examined. Our task now is to discover measures to prevent these rays from harming the inspector and the people being examined in general.

Conclusion:

Thus, radiological research methods have now found widespread use in diagnostics and have become an integral part of clinical examination of patients.

An integral part is also to prepare the patient for X-ray examination methods, as each of them has its own characteristics, which, if not done, can lead to difficulties in diagnosis.

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