



Novel Research on Medicinal Imaging

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Review Article

The chest radiograph is the most common radiographic procedure performed in the imaging department and is the initial imaging modality in a patient presenting with thoracic symptoms. The basic techniques of chest radiography have not changed significantly over the past 100 years. However, most centers are now using predominantly digital radiology as compared to the conventional screen-film technology [1]. Proper exposure and centering of a lateral chest radiograph. Points to note for proper positioning are sternum in profile, open intervertebral foramina, and superimposed bilateral anterior and posterior ribs evidencing correct lateral positioning. The soft tissues and bones of arms are not overlapping the lung field. Proper exposure is evidenced by visualization of the ribs through the heart, lung markings, and sharp outlines of the hemidiaphragms [2]. These various X-ray methodologies utilize several different types of interactions between X-rays and matter that may be employed for imaging and analysis [1]. First, X-rays can be absorbed or scattered by the tissue thereby attenuating the transmitted X-ray intensity. This is the most widely used technique for structural, vasculature, and gastrointestinal tract imaging,

There is a significant difference in x-ray attenuation between the air-filled lung and soft tissues such as the mediastinum and diaphragm, precluding uniform exposure and increasing the scatter. One way to obtain a uniform exposure is the use of scanning equalization radiography (SER). This is a computer-assisted, electronically enhanced radiography technique in which a narrow x-ray beam is scanned over the patient, and its attenuation is measured. The beam intensity is then modulated, depending on this information to equalize the regional x-ray film exposure. An artificial dark band is created at the interfaces of high contrast, such as the diaphragm-lung interface. It is not always possible to obtain a PA view (e.g., in an intensive care unit [ICU] setting); sometimes one can use an additional view to answer a specific clinical question. However, many views that were formerly used are no longer performed due to the easy availability of CT, which gives a more definite answer. Note that the cost of an additional radiographic view is still significantly less than a CT scan, and an additional view may solve a particular clinical question quickly and economically [4]. A good understanding of bisecting angle technique is necessary to correct dimensional errors associated with placement difficulties as well as instances when occlusal techniques are utilized for intraoral radiographic imaging particularly with rigid digital receptors.

References

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