

S36: X-Ray Vision: What the Blind Eye Can't Detect

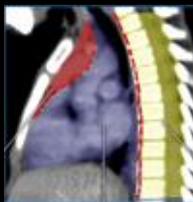
Objectives: 1. Define the most common types of pathological findings from x-ray images
2. Define the patient percentile that are diagnosed through x-ray and image modalities

Thesis Statement:

X-Rays are the basis for many diagnoses. "X-rays are often the first step in imaging, especially for suspected bone fractures and lung abnormalities. They are non-invasive and do not require special preparation." (CCD Health)

Most Common X-Ray Findings:

Mediastinal Masses: Categorized by their location they typically develop within the thymus or lymph nodes in the mediastinum. (HSS)



Anterior	Middle	Posterior
Soft Tissue Lymphoma Hyperplasia	Foregut duplication cysts	Virtually always neurogenic origin
Fat Germ Cell Tumor Thymolipoma	Lymph nodes Granulomatous Metastatic Lymphoma/Leukemia	1st decade usually malignant Most commonly neuroblastoma
Water Lymphangioma	Low Attenuation TB Fungal Calcified TB Fungal Osteosarcoma	2nd decade usually benign Ganglioneuroma Neurofibroma Rarely schwannoma Extramedullary hematopoiesis

Bone Lesions: Usually benign and first identified through x-ray. Benign lesions are less aggressive and require less intervention. Malignant, although less common, are more aggressive and may require aggressive treatment. X-rays help with differentiating between the types.

Fractures: Categorized by location and severity and occur throughout the body. Suspicion of injury is the most common cause for this x-ray.

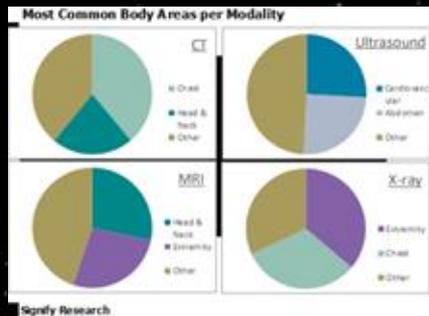
Prospective Patient Percentile (%):

In a study of 2.8 billion people 12.5% of them were screened through x-ray and 4.3% of them were diagnosed. MRI's at 0.8% and CT's at 6.5% for a first screening. (JACR)

Globally, over 4.9 billion diagnostic imaging procedures were performed in 2019, with the majority using X-ray. (Signify Research) Chart:

Modality:	Procedure Volume:
X-Ray	51.5%
CT	15.0%
MRI	7.8%
PET/Nuclear Med	1.4%
Ultrasound	24.2%

Conclusion: Whether by injury, a benign or malignancy, all images should be thoroughly examined by a medical provider by way of advanced imaging technology, especially x-rays



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