



Could you specify where to find the cardiomegaly on this X-ray?
Concerning the cardiomegaly, you will find it at [0.35, 0.61, 0.84, 0.77] in the image.
<p>To identify the location of cardiomegaly on this chest X-ray, I begin by orienting myself to the standard anatomical landmarks. The image is a posteroanterior (PA) view, as evidenced by the symmetric clavicles and the clear visualization of the thoracic spine through the cardiac silhouette — a hallmark of a well-penetrated PA radiograph. The “R” marker in the upper left corner confirms the patient’s right side is on the left of the image, which is critical for accurate spatial localization.</p> <p>I first scan the mediastinum, focusing on the cardiac silhouette, which occupies the central portion of the thorax, bordered laterally by the lungs and inferiorly by the diaphragm. The normal cardiac silhouette should occupy less than half the transverse diameter of the thorax. In this image, the cardiac silhouette appears enlarged, extending laterally beyond the expected boundaries — particularly on the left side, where the left heart border is displaced laterally and the cardiac apex is more prominent and rounded than usual.</p> <p>To precisely localize the cardiomegaly, I mentally divide the image into quadrants and focus on the central mediastinal region. I trace the cardiac borders: the right heart border is formed by the right atrium and is visible along the right mediastinal contour, while the left heart border is formed by the left ventricle and is more prominent here. The cardiac silhouette extends from approximately the level of the 4th thoracic vertebra (T4) superiorly to the diaphragm inferiorly, and spans from the midline to the left lateral chest wall.</p> <p>I then examine the cardiothoracic ratio (CTR) by comparing the transverse diameter of the heart to the internal transverse diameter of the thorax at the level of the diaphragm. Visually, the heart appears to occupy more than 50% of the thoracic width — a classic sign of cardiomegaly. The enlargement is most evident in the lower half of the cardiac silhouette, where the left ventricular contour is bulging laterally, and the cardiac apex is displaced downward and laterally, which is consistent with left ventricular enlargement.</p> <p>I also assess the surrounding structures for secondary signs: the pulmonary vasculature appears mildly engorged, and there is no obvious pulmonary edema or pleural effusion, which helps confirm that the enlargement is cardiac in origin rather than due to fluid overload or other causes. The diaphragm is well-defined, and the costophrenic angles are sharp, ruling out significant pleural effusion that might obscure the cardiac borders.</p> <p>The bounding box [0.35, 0.58, 0.83, 0.77] corresponds to the region of the cardiac silhouette that is most enlarged — specifically, the lower two-thirds of the heart, extending from the midline to the left lateral chest wall, and from just below the level of the aortic arch (around the 4th thoracic vertebra) down to the diaphragm. This region encompasses the left ventricle and the cardiac apex, which are the primary contributors to the increased cardiac silhouette in this case. The coordinates are normalized to the image dimensions, with 0.35 being the left boundary (approximately 35% from the left edge of the image), 0.58 the top boundary (58% from the top), 0.83 the right boundary (83% from the left), and 0.77 the bottom boundary (77% from the top). This box precisely encloses the area of maximal cardiac enlargement, which is consistent with left ventricular hypertrophy or dilation.</p> <p>I also consider alternative causes of mediastinal widening, such as mediastinal mass or lymphadenopathy, but the contour is smooth and rounded, consistent with cardiac enlargement rather than a mass. There is no evidence of tracheal deviation or esophageal displacement, which further supports that the enlargement is cardiac rather than extrinsic.</p> <p>In summary, the cardiomegaly is localized to the central mediastinum, specifically the lower half of the cardiac silhouette, extending laterally to the left and inferiorly to the diaphragm. The bounding box [0.35, 0.58, 0.83, 0.77] accurately captures this region of maximal cardiac enlargement, which is consistent with the visual evidence of cardiomegaly on this X-ray.</p> <p>&lt;/think&gt;</p> <p>The cardiomegaly is located at the coordinates [0.35, 0.58, 0.83, 0.77] on the image.</p>