

## Perforated Duodenal Ulcer

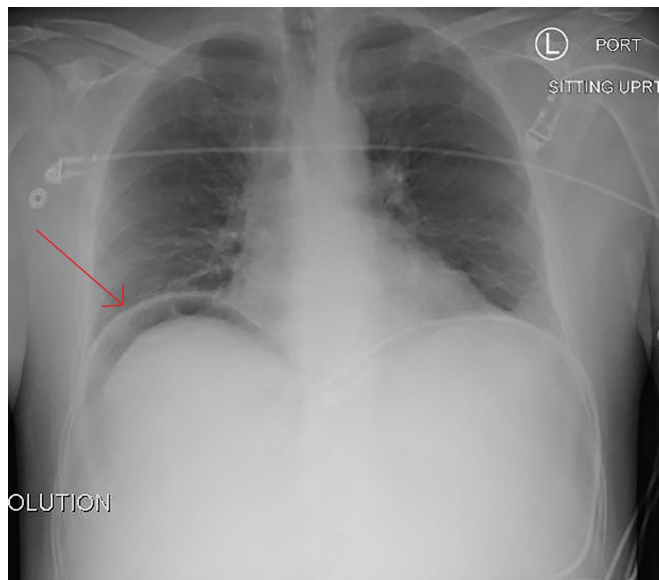
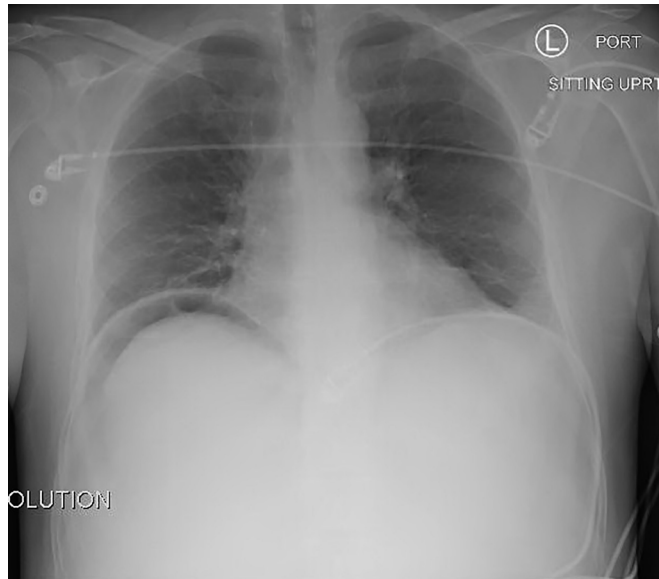
Jessa Baker\*, Jonathan Patane, MD\* and Carrie Chandwani, MD\*

\*University of California, Irvine, Department of Emergency Medicine, Orange, CA

Correspondence should be addressed to Jonathan Patane, MD at [jpatane@uci.edu](mailto:jpatane@uci.edu)

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**History of present illness:** A 53-year-old male with a history of daily alcohol abuse presented with sudden onset epigastric pain. The pain radiated to the right upper abdominal quadrant and was associated with shortness of breath and nausea. The patient's vitals were notable for blood pressure of 181/107 mmHg and a heart rate of 124/minute. He was in moderate distress and had a firm, distended abdomen with diffuse tenderness to palpation, without rebound or guarding.

**Significant findings:** In the chest radiograph (CXR), there was obvious free air under the both the right diaphragm (above the liver) and the left diaphragm, consistent with pneumoperitoneum.

**Discussion:** A perforated ulcer is a surgical emergency. Overall mortality has been shown to be approximately 6.2%.<sup>1</sup> Rapid diagnosis is essential as prognosis improves if treatment is initiated within the first six hours and worsens after 12 hours.<sup>2</sup> The sensitivity for detecting pneumoperitoneum on plain radiography ranges from 50%-80%<sup>3-8</sup> with specificity of 53%.<sup>7</sup> An upright CXR can detect as little as one to two milliliters of air.<sup>9,10</sup> If free air is not seen on a posteroanterior (PA) upright CXR, an upright lateral CXR can be obtained, which is more sensitive (98% sensitivity).<sup>8,11</sup> About 10%-20% of ruptured ulcers will not present with visible free-air under the diaphragm on plain X-ray.<sup>12</sup> In this case, given the free air seen on CXR and peritoneal signs on exam, the patient was taken straight to the operating room for general surgery.

**Topics:** Perforated ulcer, pneumoperitoneum, gastroenterology, GI, X-ray, radiograph.

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