A Case of Achalasia Masquerading as Myocardial Infarction

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Introduction:
Achalasia is an esophageal motility disorder resulting from progressive degeneration of the myenteric plexus in the esophageal wall, leading to failure of relaxation of the LES. Dysphagia to solid and liquids and regurgitation of undigested foods are common presenting symptoms. Infrequently, patients suffer from substernal chest pain. Delay in diagnosis and treatment is often due to misinterpretation of clinical features. We report a case of achalasia presenting as ST-segment elevation myocardial infarction (STEMI).

Case Description:
- 65-year-old male with tobacco use disorder presented to the ED with progressively worsening substernal chest pain radiating to the back and dyspnea on exertion. He was tachycardic and hypertensive. EKG indicated Brugada type pattern (Figure 1).
- CXR showed a widened mediastinum. Laboratory studies revealed a normal troponin level. TTE revealed a reduced ejection fraction. CTA of chest and abdomen showed markedly dilated esophagus causing mass effect on the trachea and pulmonary arteries with a normal appearing aorta (Figure 2).
- EGD exhibited a tortuous, dilated esophagus with moderately severe esophagitis. The GEJ was successfully injected with botulinum toxin. Over the next few months, he continued to suffer from esophageal failure and underwent further endoscopic treatments with botulinum toxin. Serial EKGs continued to demonstrate changes associated with esophageal mass effect on the left atrium. XR barium esophagram continued to reveal a dilated and tortuous esophagus with multiple tertiary esophageal contractions with poor propulsion and pooling at the distal esophagus (Figure 3). He was ultimately scheduled for an esophagomyotomy.

Diagnostic Tests:

![Figure 1. EKG demonstrating ST segment elevation anteriorly with inferior lateral depressions (Brugada type pattern).](image1)

![Figure 2. CTA of chest and abdomen with markedly dilated esophagus.](image2)

![Figure 3. X-ray barium esophagram with dilated and tortuous esophagus with multiple tertiary esophageal contractions and pooling at the distal esophagus.](image3)

Discussion:
Unexplained chest pain represents a substantial economic burden due to overutilization of invaluable resources. Among those who report chest pain, 10%-20% have a GI cause. Unlike GERD, esophageal motility disorders, such as achalasia, are an uncommon presentation of noncardiac chest pain. Symptoms of achalasia result from an eventual loss of peristalsis in the distal esophagus and failure of LES relaxation with swallowing. Diagnosis is established with esophageal manometry, which our patient was too ill to undergo. Without early intervention for this progressive disease, esophageal failure can develop leading to an esophagomyotomy. This case reinforces the timeless principle of forming an extensive differential diagnosis to avoid a misdiagnosis or delayed treatment.

Conclusions:
1. Esophageal motility disorders can present as noncardiac chest pain. Diagnosis of achalasia is established through esophageal manometry.
2. Without early intervention, severe esophageal dilation can develop leading to esophageal failure and esophagomyotomy.
3. It is important to consider esophageal motility disorders in the evaluation of chest pain.

References: