
Case Presentation

Day 1
A 74 year old male presented to A&E with acute severe 8/10 central lower chest and upper abdominal pain radiating down left arm. It started suddenly at 9pm, 3 hours after a Chinese meal. He had no previous similar history.

PMHx: COPD, GORD, duodenal ulcer 10 years ago, gout

Dxh: atorvastatin, ramipril, Spiriva, Serelax, naproxen PRN

SHx: ex-smoker (70 pack years), Drinks 24 units alcohol per week.

On examination: GCS 15/15, BP:182/91mmHg, HR:84bpm, SpO2:97%, O2, mild epigastric tenderness, bilateral mild inspiratory wheeze

Initial investigations:
- ECG: sinus bradycardia (settled shortly after admission)
- Bloods: U&E, LFTs, amylase and troponin (initial and 12 hour) normal. WCC 11.4, CRP 186
- CXR reported as magnified (AP projection), no focal consolidation

Initial management:
- Acute coronary syndrome (ACS) treatment
- IV pantoprazole and gaviscon

History revisited:
- Pain started with severe shoulder pain → abdominal pain → left sided chest pain. Radiating down left arm and into his chest. Couldn’t sleep overnight due to severe belching.
- Systolic BP discrepancy of 34 mmHg between arms.
- Biliary ultrasound: normal

Day 2
- Ongoing significant belching with intermittent mild chest pain and ongoing epigastric discomfort.
- CT aortogram requested.

Day 3
- Initial CT report: No dissection, ?large vessel ateritis.
- ESR 85. ANA & ANCA negative

Day 4
- CT report addendum: Reported as aortic dissection. Patient transferred to a cardiothoracic centre and was managed conservatively for extensive intramural haematoma and two penetrating aortic ulcers with a tabeuloïd infarct. Discharged home 14 days after onset of pain.

Classification of Acute Aortic Syndromes

Aortic Dissection (AD) involves a tear in the intima and separation of the intimal, medial or adventitial layers.

Penetrating Aortic Ulcer (PAU) results from atheromatous lesions that ulcerate and disrupt the internal elastic lamina.

Intramural Hematomas (IMH) can arise from penetrating aortic ulcers or occur in isolation after disruption of the vaso vasmor, e.g. in trauma. They differ from dissections as there is no intimal tear. Dissections can be categorised by DeBakey (I, II, III) or Stanford (A & B) classifications.

Discussion

Belching (eructation) is known to be associated with Acute Coronary Syndromes (ACS) 7.8
- It has also been associated with angina pectoris.8 It is particularly associated with an Inferior Myocardial Infarction (MI). Belching may even seem to relieve the symptoms.6
- Acute belching implies a Positive Predictive Value (PPV) of 72-81% for ACS.6

The mechanism of belching in ACS is poorly understood
- Marked vagal stimulation associated with inferior infarction causing gastric distress and subsequent gas formation has been suggested.8

Our literature search was unable to identify a recorded association between AAS and belching.
- This could be due to relatively less common incidence of AAS.

We suggest the following potential mechanisms:
- A response to pain leading to excess air swallowing
- Vagal stimulation
- A result of the close anatomical relationship between esophagus and aorta. Direct pressure from a swollen aorta could affect esophageal or intramural haematoma.

Conclusion and Learning points

A good history, always, is paramount.
- A high index of suspicion is required. Our patient, given the saliency of his gastrointestinal symptoms, could have been given a gastrointestinal diagnosis.
- Any presentation with severe chest or abdominal pain merits a good search for the cause.

Belching has been observed in association with cardiac problems such as angina, however this is the first time in literature an association between AAS and belching has been recorded.

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