Indian Journal of Medical Case Reports ISSN: 2319–3832(Online)
An Online International Journal Available at http://www.cibtech.org/jcr.htm
2013 Vol.2 (2) April-June, pp.57-63/Robert James et al.

Case Report

SUSPICIOUS SHADOW IN CHEST XRY

***Robert James[1], Amrinder Singh Dhaliwal[3], Amarjit Singh Vij[1], Jessie James[2], Akashdeep Singh[4], Kusum Bali[1] and Maxima Khurana[1]**

[1]*Department of Medicine, Maharishi Markandeshwar Medical College and Hospital, Kumarhatti, Solan*
[2]*Department of Anatomy, Maharishi Markandeshwar Medical College and Hospital, Kumarhatti, Solan*
[3]*Deparment of Radiology, Punjab Institute of Medical Sciences, Jalandhar, India*
[4]*Department of Pulmonary and Critical Care, Dayanand Medical College, Ludhiana, India*
[*]*Author for Correspondence*

ABSTRACT
62 years old male was admitted with complaints of fever and precordial chest discomfort for 3 days prior to admission. There were no other complaints historically. Past medical history and personal history was not contributory. Respiratory System revealed harsh breath sounds and scattered crepts in the left infra mammary area and left lung base posteriorly which disappeared after forceful coughing. Based on history and bed side examination, possibilities of Left Lower pneumonitis and/or acute coronary syndrome were kept in mind and the patient was evaluated for the same. Serial ECG's and cardiac enzymes, Trop I were done which were normal. Echocardiography and TMT done subsequently were normal too. However chest XRY showed an abnormal shadow extending from the mediastinum to the right lung field and it posed a diagnostic challenge. CT Scan Chest was done which revealed the suspicious shadow to be a dilated oesophagus (with no obvious wall thickness/ mitotic pathology). The patient was diagnosed as having Achlasia Cardia. A gastroenterology and gastro-surgery opinion was taken and the patient was transferred under gastroenterology for further management, where the patient was subjected to an upper GI endoscopy and its findings too were consistent with the diagnosis of achalasia cardia.

Key Words: *Achlasia Cardia, Oesophagus, Dysphagia*

CASES
62 years old male was admitted with complaints of fever and precordial chest discomfort for 3 days prior to admission.
Chest pain was dull aching in the left infra mammary area, it increased on deep inspiration. There was no radiation of the pain to the medial aspect of left forearm, or neck or jaw. There was no history of post prandial angina.
There were no other complaints historically. There was no history of nausea, vomiting, dysphagia, heart burns, retrosternal burning sensation or retrosternal lancinating chest pain.
Past medical history and personal history was not contributory. Personal History was not contributory, patient was a non smoker and he had no history of substance abuse like alcohol dependence.
Clinical Examination revealed a middle aged male of average build and nutrition and was lying comfortably in bed. Pulse rate was 101/min, regular normal volume pulse, blood pressure of 130/80mmHg, and respiratory rate of 18/min. JVP was normal. There was no pallor, cyanosis, icterus or lymphadenopathy. Sternal tenderness was absent.
Respiratory System revealed harsh breath sounds and scattered crepts in the left infra mammary area and left lung base posteriorly which disappeared after forceful coughing.
CVS, CNS and Abdominal examination were essentially normal.
Based on history and bed side examination of the patient possibilities of Left Lower pneumonitis and/or acute coronary syndrome were kept in mind and the patient was evaluated for the same.
After the Chest XRY was available, possibility of posterior mediastinal mass was also kept in mind. CT Scan Chest confirmed the diagnosis of Achlasia Cardia. A gastroenterology and gastro-surgery opinion was taken and the patient was transferred under gastroenterology for further management, where the

patient was subjected to an upper GI endoscopy and its findings too were consistent with the diagnosis of achalasia cardia.

Investigations

Hemoglobin 12.9 gm/dL, Total Leukocyte Count 13539/mL, Random Blood Sugar 121 mg/dL, Blood Urea 35 mg/dL, Creatinine 0.9 mg/dL, Calcium 9.0 mg/dL, Magnesium 2.1 mg/dL , Potassium 3.97 mmol/L, Sodium 140 mmol/L, ESR 16mm/hr, CRP 15.6 mg/L, Procalcitonin was 6.05 mg/L. Sputum culture showed few gram positive cocci. Blood Culture and Urine Culture were sterile. Arterial blood Gas revealed pO2 of 99mmHg and pCO2 of 30.2 mmHg and pH of 7.33. ECG showed sinus tachycardia. Serial ECG's and cardiac enzymes, Trop I were also normal. Echocardiography done showed a normal study, all four cardiac chambers were normal, LVEF of 50%, no regional wall motion abnormality or diastolic dysfunction. Once the patient was afebrile and improved, he was subjected to stress test (TMT) which was negative for inducible ischemia.

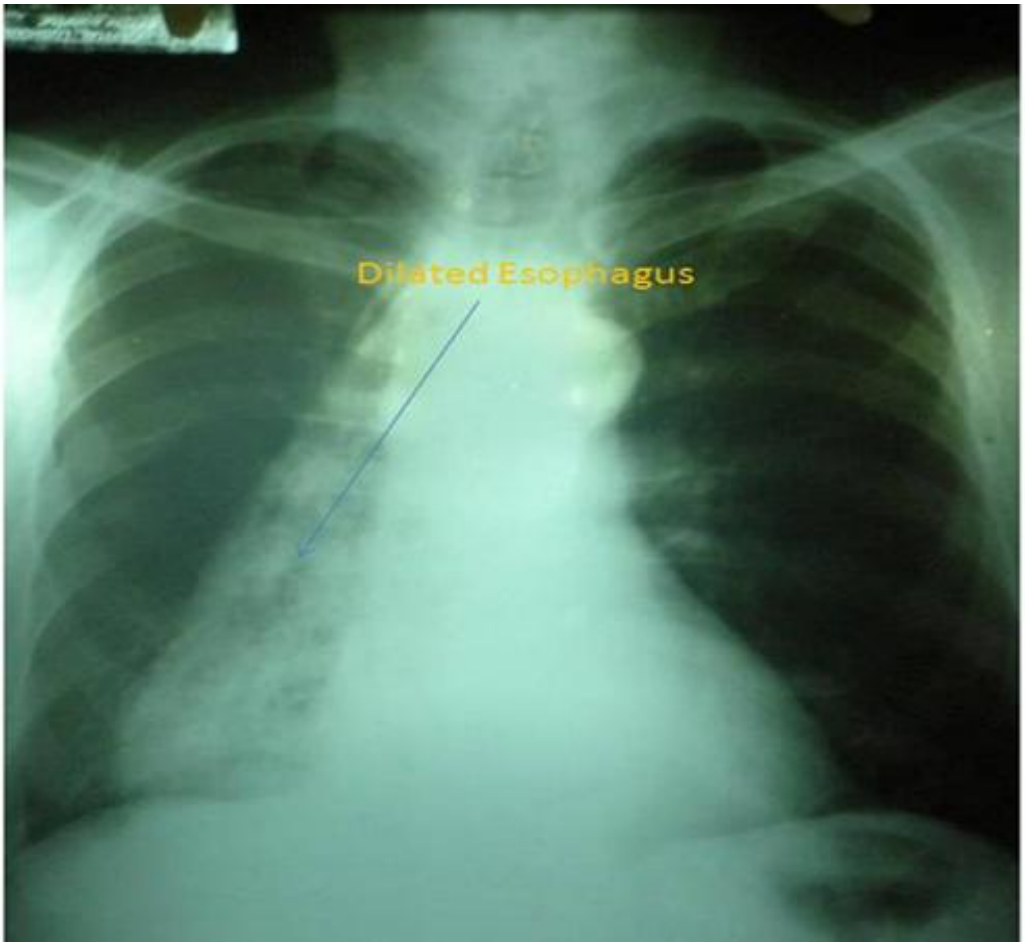

Figure 1: Dilated Esophagus

Chest XRY however showed an abnormal shadow extending from the mediastinum to the right lung field and it posed a diagnostic challenge. So a CT Scan Chest was done to further evaluate the nature of the abnormal shadow noted in chest xry and also to rule out any posterior mediastinal mass, and it revealed the suspicious shadow in right chest was a dilated oesophagus (with no obvious wall thickness/ mitotic pathology) and hence the patient was diagnosed as having Achlasia Cardia.

Figure 2: Dilated Esophagus filled with food particles and air on top

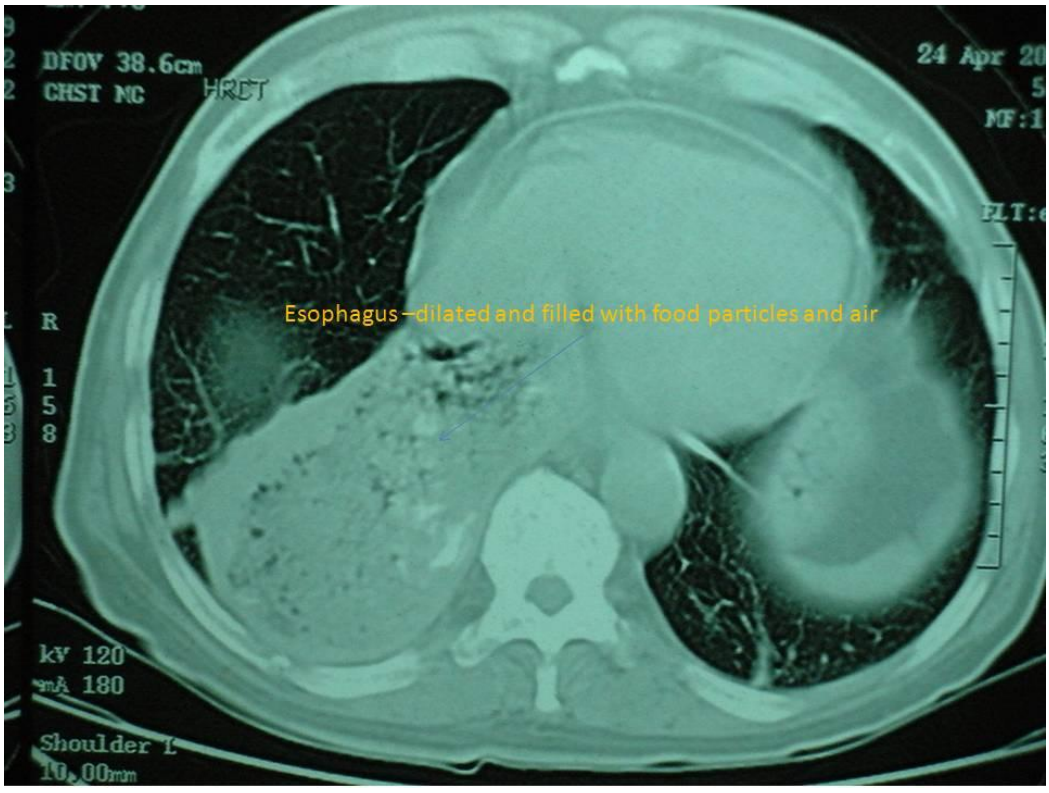

Figure 3: Esophagus-dilated and filled with food particles and air

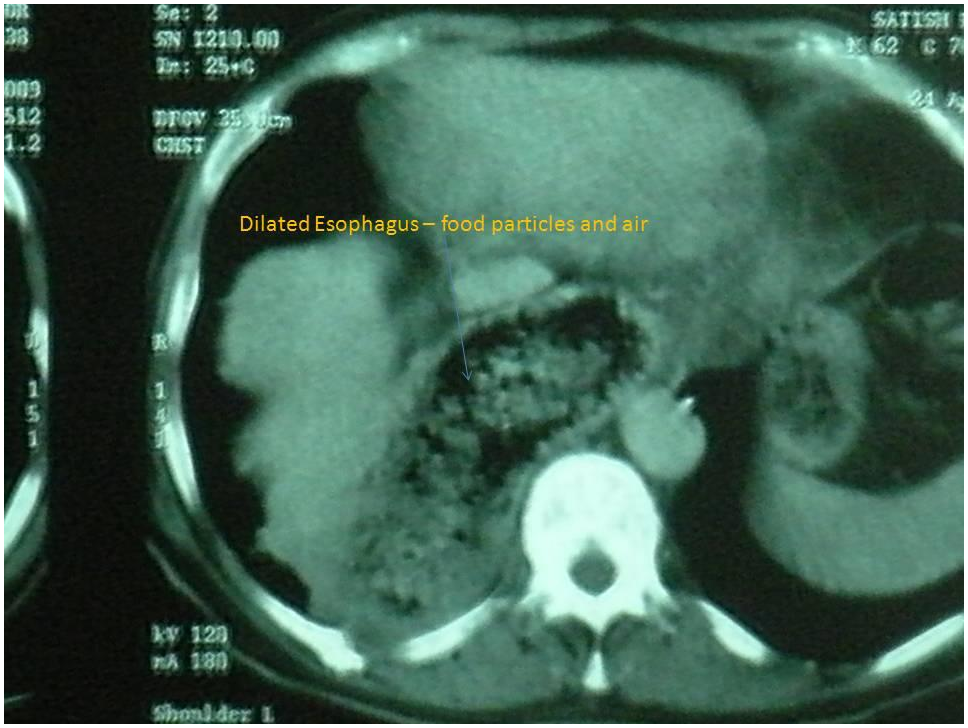

Figure 4: Dilated Esophagus- food particles and air

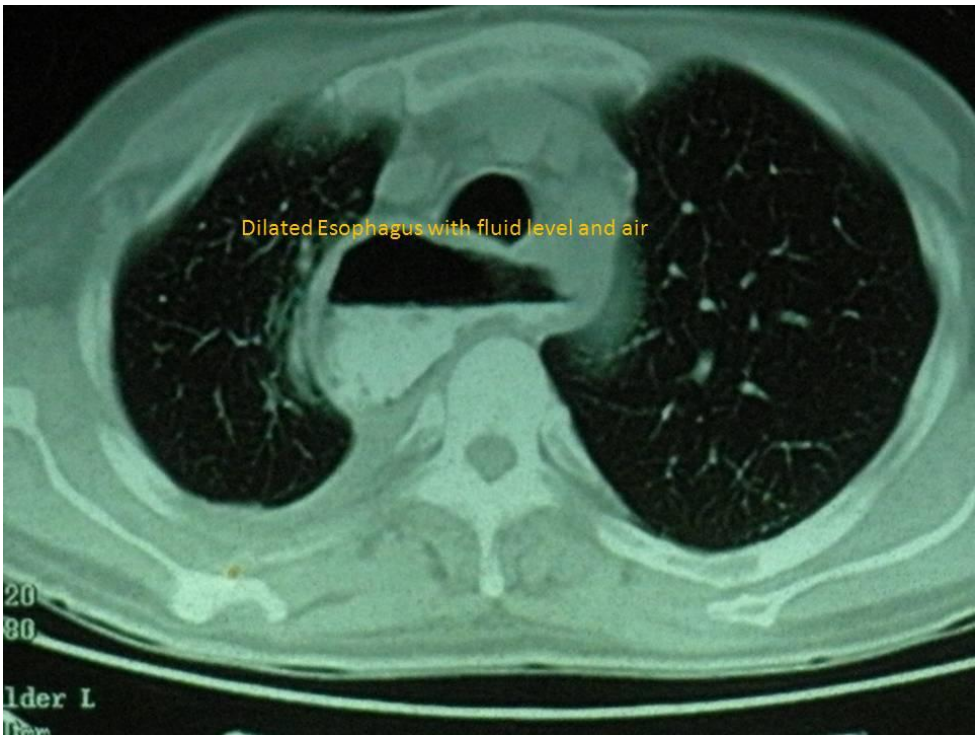

Figure 5: Dilated Esophagus with fluid level and air

Case Report

Differential Diagnosis

Based on history and bed side examination of the patient possibilities of Left Lower pneumonitis and/or acute coronary syndrome were kept in mind and the patient was evaluated for the same.

After the Chest XRY was available, possibility of posterior mediastinal mass was also kept in mind. CT Scan Chest confirmed the diagnosis of Achlasia Cardia. Endoscopy performed in due course also confirmed the diagnosis of Achlasia Cardia.

Treatment

In view of clinical history, examination and laboratory reports, patient was started on injection Augmentin 1.2gm Q8H IV, medication for symptomatic relief.

Tab Acetaminophen 650 mg for fever, Syp. Ambroxol 2tsf TDS PO and the patient responded to the therapy and became afebrile on third hospital day and chest pain gradually improved.

A gastroenterology and gastro-surgery opinion was taken and the patient was transferred under gastroenterology team for further management.

Where the patient was subjected to an upper GI endoscopy and its findings too were consistent with the diagnosis of achalasia cardia.

Since the patient was asymptomatic for Achlasia Cardia, gastro surgery advised regular follow ups and medical management and dietary and life style changes.

Outcome and Follow-Up

Patient still comes to gastroenterology opd for regular follow up and is asymptomatic. Changes were made to his diet and life style modification was advised.

DISCUSSION

Achalasia, also known as esophageal achalasia, achalasia cardiae, cardiinfection, ospasm, and esophageal aperistalsis, is an esophageal motility disorder. The smooth muscle layer of the esophagus loses normal peristalsis and the lower esophageal sphincter (LES) fails to relax properly in response to swallowing (Park and Vaezi, 2005).

Achalasia is characterized by difficulty swallowing, regurgitation, and sometimes chest pain. Diagnosis is reached with esophageal manometry and barium swallows X-ray studies. Various treatments are available, although none cure the condition completely. Certain medications or Botox may be used in some cases, but more permanent relief is brought by esophageal dilatation and surgical cleaving of the muscle (Heller myotomy).

The most common form is primary achalasia, which has no known underlying cause. It is due to the failure of distal esophageal inhibitory neurons. However, a small proportion occurs as a secondary result of other conditions, such as esophageal cancer or Chagas disease (an infectious disease common in South America) (Spiess Kahrilas, 1998). Achalasia affects about one person in 100,000 per year (Spiess and Kahrilas, 1998; Lake and Wong, 2006).

Signs and Symptoms

The main symptoms of achalasia are dysphagia (difficulty in swallowing) and regurgitation of undigested food. Dysphagia tends to become progressively worse over time and to involve both fluids and solids. Some achalasia patients also experience weight loss, coughing when lying in a horizontal position, and chest pain which may be perceived as heartburn. The chest pain experienced, also known as cardio spasm and Non Cardiac Chest Pain (NCCP) can often be mistaken for a heart attack. It can be extremely painful in some sufferers. Food and liquid, including saliva, are retained in the esophagus and may be inhaled into the lungs (aspiration).

Diagnosis

Due to the similarity of symptoms, achalasia can be mistaken for more common disorders such as gastroesophageal reflux disease (GERD), hiatus hernia, and even psychosomatic disorders.

"Bird's beak" appearance, typical in achalasia.

Case Report

Specific tests for achalasia are barium swallow and esophageal manometry. In addition, endoscopy of the esophagus, stomach and duodenum (esophagogastroduodenoscopy or EGD), with or without endoscopic ultrasound, is typically performed to rule out the possibility of cancer (Spiess and Kahrilas, 1998). The internal tissue of the esophagus generally appears normal in endoscopy, although a "pop" may be observed as the scope is passed through the non-relaxing lower esophageal sphincter with some difficulty, and food debris may be found above the LES.

Treatment

Sublingual nifedipine significantly improves outcomes in 75% of people with mild or moderate disease. Surgical myotomy provides greater benefit than either botulinum toxin or dilation in those who fail medical management (Wang *et al.,* 2009).

Lifestyle Changes

Both before and after treatment, achalasia patients may need to eat slowly, chew very well, drink plenty of water with meals, and avoid eating near bedtime. Raising the head of the bed or sleeping with a wedge pillow promotes emptying of the esophagus by gravity. After surgery or pneumatic dilatation, proton pump inhibitors can help prevent reflux damage by inhibiting gastric acid secretion; and foods that can aggravate reflux, including ketchup, citrus, chocolate, mint, alcohol, and caffeine, may need to be avoided.

Medication

Drugs that reduce LES pressure are useful. These include calcium channel blockers such as nifedipine, and nitrates such as isosorbide dinitrate and nitroglycerin. However, many patients experience unpleasant side effects such as headache and swollen feet, and these drugs often stop helping after several months.

Botulinum toxin (Botox) may be injected into the lower esophageal sphincter to paralyze the muscles holding it shut. As in the case of cosmetic Botox, the effect is only temporary and lasts about 6 months. Botox injections cause scarring in the sphincter which may increase the difficulty of later Heller myotomy. This therapy is only recommended for patients who cannot risk surgery, such as elderly persons in poor health (Spiess and Kahrilas, 1998).

Pneumatic Dilatation

In balloon (pneumatic) dilation or dilatation, the muscle fibers are stretched and slightly torn by forceful inflation of a balloon placed inside the lower esophageal sphincter. Gastroenterologists who specialize in achalasia and have performed many of these forceful balloon dilatations achieve better results and fewer perforations. There is always a small risk of a perforation which requires immediate surgical repair. Pneumatic dilatation causes some scarring which may increase the difficulty of Heller myotomy if the surgery is needed later. Gastroesophageal reflux (GERD) occurs after pneumatic dilatation in some patients. Pneumatic dilatation is most effective on the long term in patients over the age of 40; the benefits tend to be shorter-lived in younger patients. It may need to be repeated with larger balloons for maximum effectiveness (Lake and Wong, 2006).

Follow-Up Monitoring

Even after successful treatment of achalasia, swallowing may still deteriorate over time. The esophagus should be checked every year or two with timed barium swallow because some may need pneumatic dilatations, a repeat myotomy, or even esophagectomy after many years. In addition, some physicians recommend pH testing and endoscopy to check for reflux damage, which may lead to a premalignant condition known as Barrett's esophagus or a stricture if untreated.

Take Home Messages

1 As a clinician we must keep all possible anatomical structures in mind in the area where the patients has complaints and then approach the diagnosis in an unbiased manner.
2 A long standing disease, Achlasia Cardia in this case, can present asymptomatically and it may be a coincidental finding.

3 With the help of modern machines that aid in diagnosing the etiology, one can diagnose certain disorder's early in their disease course and hence allow for early intervention to alleviate patient suffering and avoid complications associated with late diagnosis.

REFERENCES

Deb S, Deschamps C and Cassivi SD *et al.*, (2005). Laparoscopic esophageal myotomy for achalasia: factors affecting functional results. *Annals of Thoracic Surgery* **80**(4) 1191–1195.

Diehl DL (1999). Acupuncture for gastrointestinal and hepatobiliary disorders. *Journal of Alternative and Complementary Medicine* (New York, N.Y.) **5**(1) 27–45.

Emanuel Rubin, Fred Gorstein, Raphael Rubin, Roland Schwarting and David Strayer (2001). Rubin's Pathology-clinicopathological foundations of medicine. Maryland: Lippincott Williams & Wilkins 665.

Lake JM and Wong RK (2006). Review article: the management of achalasia-a comparison of different treatment modalities. *Alimentary Pharmacology and Therapeutics* **24**(6) 909–18.

Park W and Vaezi M (2005). Etiology and pathogenesis of achalasia: the current understanding. *American Journal of Gastroenterology* **100**(6) 1404–14.

Spiess AE and Kahrilas PJ (1998). Treating achalasia: from whalebone to laparoscope. *Journal of the American Medical Association* **280**(7) 638–42.

Wang L, Li YM and Li L (2009). Meta-analysis of randomized and controlled treatment trials for achalasia. *Digestive Diseases and Sciences* **54**(11) 2303–11.