

Surprising cardiac silhouette

N. IAGARU, MD, PhD^a; A.H. IAGARU, MD^b; Eliza CINTEZA, MD^c

^aAssociated Professor of Pediatrics, MD, PhD, 2nd Pediatrics Department, "Carol Davila" University of Medicine and Pharmacy, IOMC "A. Rusescu", Bucharest, Romania

^bMedical Instructor of Radiology, Stanford University, USA

^cAssistant Professor, 2nd Pediatrics Department, "Carol Davila" University of Medicine and Pharmacy, IOMC "A. Rusescu", Bucharest, Romania

ABSTRACT

The authors present the case of a 15 years old girl admitted for chest pain, cough, and severe anemia. These symptoms were the expression of dysfunctional esophagoplasty with transverse colon, performed 10 years ago for a severe circumferential esophageal burn after ingesting NaOH solution. We choose to present this case due to the radiological image, which first it was diagnosed as lung abscess and treated with three antibiotics in a County Hospital. The case is interesting by its diagnosis pitfall. We want also to underline the importance of anamnesis and medical history in establishing a diagnosis.

Key words: false enlarged mediastinum (pseudocardiomegaly), diagnostic pitfall.

CLINICAL INFORMATION

A 15-yr old girl was admitted for suspected severe respiratory or cardiologic emergency with anterior chest pain irradiating to the left shoulder and arm, with pallor, fatigue, and rare dry cough. Her present medical history had a sudden onset with intense continuous chest pain no related to breathe or cough. Based on

these symptoms and chest X-ray suggesting a right lung abscess, she received parenteral Ceftriaxon, Oxacilline and Gentamycin for ten days after the onset with no improvement.

Ten years ago, the child suffered a severe circumferential esophageal burn after ingesting NaOH solution. Subsequently, the patient developed a complete occlusive esophageal

Address for correspondence:

Eliza Cinteza, MD, IOMC "Alfred Rusescu", 120 Lacul Tei Blvd., District. 2, Bucharest, Romania
email address: elizacinteza@yahoo.com

stricture and an esophagoplasty with intrathoracic transverse colonic loop was performed at that time.

Clinical examination. Normal body temperature. Respiratory rate: 30/min. Lung auscultation revealed bowel sounds on the right side of the sternum. Pulse rate: 78/min. Blood pressure: 90/50 mmHg. Low degree systolic murmur (2/6). Abdomen and central nervous system findings were within normal limits except for "pica". Surgical linear scars were noticed in the upper abdominal and thoracic areas.

Blood tests showed severe anemia (Hb 6.2 g/dl; Ht 24%; MCHE 28%), serum iron level 3 mmol/l (N: 9-30 mmol/l) with normal WBC. Acute phase reactants, BUN, liver enzymes, and serum proteins were normal. Occult digestive hemorrhages test were negative.

ECG and echocardiographic examination were normal.

Gastroesophageal endoscopy: new oesophagus (transverse colonic loop) without bleeding. Important stasis of ingested food in its inferior third normal colo-gastric anastomosis.

Diagnosis: Dysfunctional esophagoplasty with transverse colon.

IMAGISTIC DIAGNOSIS

Chest X-ray (FIGURES 1, 2, and 3)

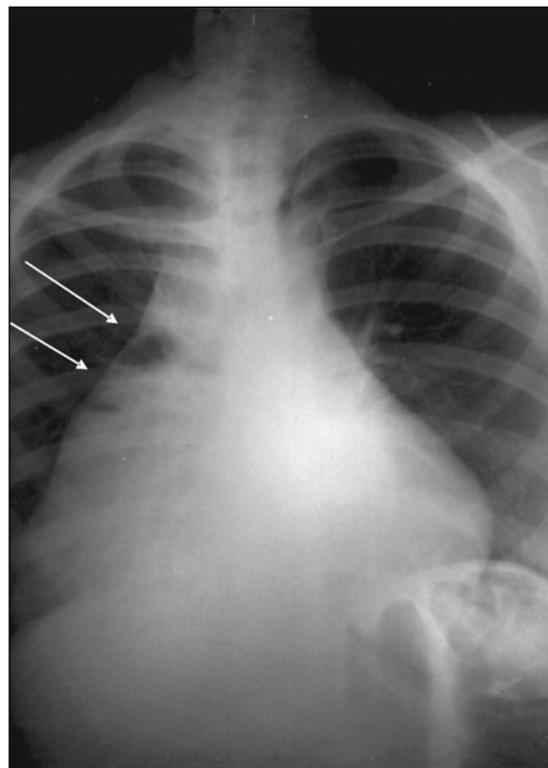


FIGURE 1. Chest radiograph postero-anterior view performed at admission. The image in upright position suggested an enlarged mediastinum with an unclear right-sided heart limit and multilevel hydroaerial images

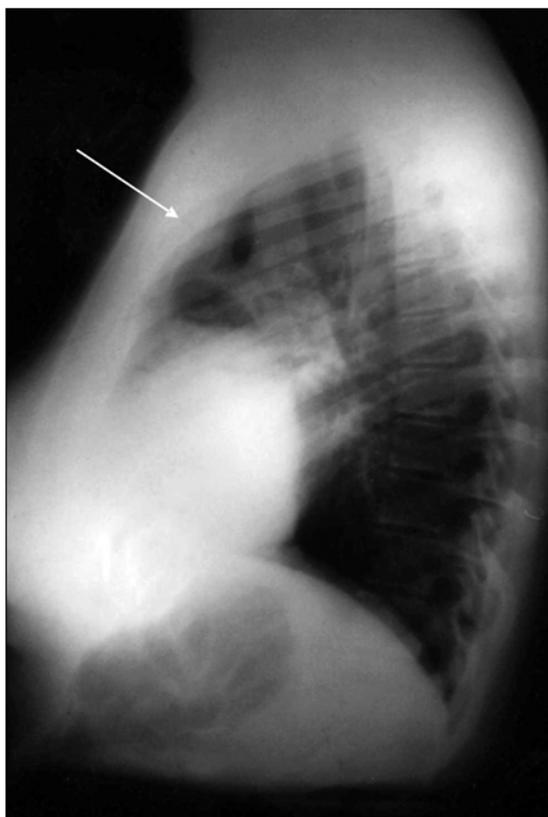


FIGURE 2. Profile. Hydroaerial images are located in the anterior mediastinum.

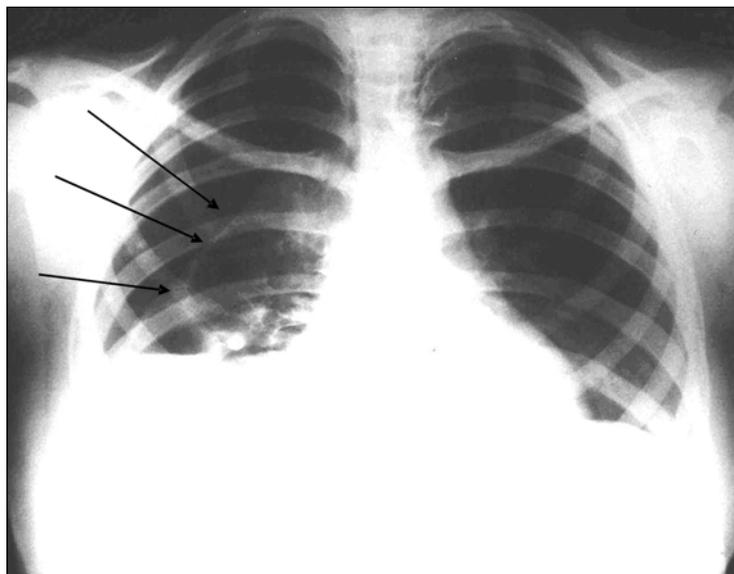


FIGURE 3. Chest radiograph performed 24 hours later in upright position, after barium sulphate ingestion. Heart limit is precisely outlined with lung structures inside. On the right side (above the diaphragm), horizontal barium level with radiolucent areas above. Lateral, the radiolucent areas are limited by a clear contour, like a wall containing all hydroaerial images.

Treatment and clinical course. The anemia was proved to be due to iron deficiency and was successfully treated with ferrous sulphate. A new surgical operation was proposed for this dysfunctional esophagoplasty but the patient has had a satisfactory outcome. □

FINAL CLINICAL COMMENTS. DIAGNOSTIC PITFALL

The image of a enlarged mediastinum with multilevel hydroaerial images near the right side of the heart was falsely diagnosed. At a first glance, a wrong diagnosis of lung or mediastinal multilevel hydroaerial images was made. The symptoms present at admission were explained either by anemia (pallor, fatigue) or by prolonged stasis of ingested food in the inferior part of new esophagus (cough, chest pain). The most important issues in the esophageal substitution are the peristaltic and antireflux properties of the native esophagus, which cannot be accomplished by the new esophagus. We present a list of differential diagnosis to this case in table 1. (1-11) Late complications after colonic interposition are debilitating symptoms (severe dysphagia, recurrent aspiration pneumonia), significant proximal and cologastric strictures, graft failures, redundant graft requiring revision (colonic redundancy), dumping syndrome, intestinal obstruction caused by adhesions, intrathoracic obstruction of the graft, poor quality of life, and malnutrition in young adults. Colonic redundancy, which is the most common complication in esophagoplasty using colonic loop, is due to the tridimensional development of the translocated colon which become too long, too large and sinuous. This situation is favorable for stasis (10).

Barium studies and computed tomography scan or endoscopy are necessary in evaluation

of esophagoplasty with transverse colon after corrosive esophageal strictures. □

Surgery management must be taken into consideration (12-14). □

DIFFERENTIAL DIAGNOSIS

Differential Diagnosis
Congenital lung cysts
Cystic bronchiectasis
Cystic fibrosis
Desquamative interstitial pneumonia
Lymphocytic interstitial pneumonia
Lung abscess
Mediastinal abscesses
Congenital mediastinal cysts
Lymphangioliomyomatosis
Langerhans histiocytosis
Cystic metastasis
Wegener granulomatosis
<i>Pneumocystis carinii</i> pneumonia
Pulmonary paragonimiasis
Septic pulmonary emboli
Cystic Pulmonary Hamartoma
Diaphragmatic hernia
Cardial achalasia
Esophageal diverticulum
Megaesophagus
Schatzki ring
Aortic dissection

TABLE 1. Imagery differential diagnosis

CONCLUSION

1. The past medical history must never be ignored when establishing a diagnosis. In our case, this was an example of *wrong diagnosis* starting with anamnesis and continuing with a superficial clinical examination.
2. The clinical symptoms and signs, cough and chest pain, can be attributed to the prolonged stasis of ingested food in the inferior part of new esophagus.

REFERENCES

1. **Jawad JA, Al-Samarrai AI, Al-Rabeeah, et al** – The management of the esophageal strictures in Saudi children. *Ann Saudi Med* 1995; 15 (1):43-47
2. **Postlethwait RW, Surkin MI, Lawson W, et al** – Colonic interposition for esophageal substitution. *Surg Gynecol Obstet* 1983 Mar; 156 (3):377-383
3. **Rodgers BM, Ryckman FC, Talbert JL** – Blunt transmediastinal total esophagectomy with simultaneous substernal colon interposition for esophageal caustic strictures in children. *J Pediatr Surg* 1981; 16:184-189
4. **Stone MM, Mahour GH, Weizman JJ, et al** – Esophageal replacement with colon interposition in children. *Ann Surg* 1986; 203:346-351
5. **Barry H, Sudha R, Binita S** – Case Report of Precursor B-Cell Lymphoblastic Lymphoma Presenting as Syncope and Cardiac Mass in a Nonimmunocompromised Child [Illustrative Cases]. *Pediatr Emerg Care* 2007; 23:576-579
6. **Roy CL, Minor MA, Brookhart MA, et al** – Does This Patient With a Pericardial Effusion Have Cardiac Tamponade? *JAMA* 2007; 297:1810-1818
7. **Horenstein MS, Skoumal KS, Graneto JW** – Postpericardiotomy Syndrome. www.emedicine.com. Last updated 29.05.2008
8. **Dhir R, Sutcliffe RP, Rohatgi A, et al** – Surgical management of late complications after colonic interposition for esophageal atresia. *Ann Thorac Surg* 2008; 86(6):1965-1967
9. **Hsu HS, Wang CY, Hsieh CC, et al** – Short-segment colon interposition for end-stage achalasia. *Ann Thorac Surg* 2005; 79(2):749
10. **Strauss DC, Forshaw MJ, Tandon RC, et al** – Surgical management of colonic redundancy following esophageal replacement. *Dis Esophagus* 2008; 21(3):E1-5
11. **Lee KH, Lee JS, Lynch DA, et al** – The Radiologic Differential Diagnosis of Diffuse Lung Diseases Characterized by Multiple Cysts or Cavities. *J Comput Assist Tomogr* 2002; 26(1):5-12
12. **Dhir R, Sutcliffe RP, Rohatgi A, et al** – Surgical Management of Late Complications After Colonic Interposition for Esophageal Atresia. *Ann Thorac Surg* 2008; 86:1965-1967
13. **Shokrollahi K, Barham P, Blazeby JM, et al** – Surgical revision of dysfunctional colonic interposition after esophagoplasty. *Ann Thorac Surg* 2002; 74(5):1708-1711
14. **Ure BM, Slany E, Eypasch EP, et al** – Quality of life more than 20 years after repair of esophageal atresia. *J Pediatr Surg* 1998; 33(3):511-515

