

Fig. 1



Chest radiograph of a 3-year-old boy with congenital diaphragmatic hernia.

symptoms. Presenting symptoms in a case of 5 months old male has been described as respiratory along with cardiac distress [7]. In another 17-month-old female, the opening features were vomiting and abdominal pain [13]. Presentations in a 7-month-old female were persistent dyspnea and cough unresponsive to antibiotic administration [9]. In another female patient aged 12 months, CDH was reported with acute respiratory distress accompanied with abdominal pain [14]. In another study on 15 late presenting CDH patients, each of the respiratory and gastrointestinal symptoms were reported in 40%, whereas 20% of the patients showed a combination of these [15]. In addition to such clinical heterogeneity, asymptomatic CDH patients are also seen in 10% of cases [6]. The age of the patients is a feature that can influence clinical presentation in late presenting CDHs. In fact, older patients are more likely to present with abdominal symptoms, whereas younger patients present more commonly with respiratory problems [4,7]. In our 3-year-old patient, abdominal pain was the presenting symptom without any respiratory problems. Nevertheless, a strict relationship between age and clinical presentation has not been established. It is possible that clinical presentation is influenced by other individual, acquired, or genetic determinants yet to be identified.

Regarding the high risk of mortality in late presenting CDH patients, correct and immediate diagnosis of this condition is of critical importance. Timely diagnosis of the defect seems to be the main prognostic factor in

CDH [2,15,16]. Delayed diagnosis has been reported in 25% of late presenting CDH with the most common reason has been a nondiagnostic pulmonary radiograph [2,17]. In the study of 15 late presenting CDH during a definite initial diagnosis based on chest radiography was amenable in only 40% of the patients [15]. In another study, chest radiographs were diagnostic in 82.6% of patients with late presenting CDH [18]. In our patient, a combination of chest and abdominal radiography was used for initial evaluation. This showed that the left space of the hemithorax was occupied by the loops of the bowel. The right side of the hemithorax, on the other hand, was replaced by the heart. In the case of an 11-year-old girl who represented with acute abdominal pain, chest and abdominal radiographs showed air–fluid mass in the chest hemithorax alongside with penetration of intestinal loops and mediastinal dislocation [3]. A right-shifted heart and mediastinum within the hemithorax was previously reported in a 17-month-old affected female as well [13]. In another female patient with CDH and age of 12 months, no breath sound was detected in the left side hemithorax which was stuffed with right-shifted mediastinum [14]. Overall, confusing chest radiographs resembling other acute pulmonary disorders such as pneumonia, pleural effusion, or pneumothorax may occur in patients with late presenting CDH [19]. Although observing the gastrointestinal volvulus structure in imaging studies of chest is a helpful feature – as for the case reported in present study – a definite diagnosis can be made by imaging of the abdomen indicating dislocation or absence of gastric bubble [20]. In suspected patients, performing a computed tomography of the chest can further provide valuable information in late presenting CDH [15].

Our patient was a case of left-sided late presenting CDH. The location of the defect is important as the diagnosis of right-sided defects may be missed because of the blockage of the defect by the liver [6]. Left-sided, right-sided, and bilateral disease have reported with frequencies of 64, 26, and 10%, respectively, in a previous study [2]. In other reports, 90% of CDH cases showed left-sided disease [5,9]. In a review study on 349 patients with late presenting CDH, chest radiography was diagnostic in half of the patients with left-sided disease and 44% of patients with right-sided herniation [19]. Pathological evidences suggestive of a liver hypotrophy may be representative of right-sided CDH [21]. It is noted that right-sided CDH cases are more prone to respiratory symptoms, as liver blocks the entrance of the abdominal organs into the thoracic cavity and therefore no gastrointestinal symptoms are formed [9]. In line, our participant was a left-sided case representing with a gastrointestinal problem (i.e. abdominal pain).

Conclusion

It is of critical importance to differentiate late presenting CDH from other potential causes of acute abdominal pain. Timely diagnosis and immediate surgical intervention are inevitable in order to reduce the mortality rate. This can be amenable by a combination of chest and abdominal imaging studies which render a reliable method for the diagnosis of late CDH.

Conflicts of interest

There are no conflicts of interest.

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