Sudden onset of breathlessness secondary to diaphragmatic hernia: a case report

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ABSTRACT
We report a case of sudden onset of breathlessness secondary to diaphragmatic hernia in a 98-year-old woman admitted for recurrent falls.

Key words: Accidental falls; Dyspnea; Hernia, diaphragmatic

CASE PRESENTATION
In April 2007, a 98-year-old woman was admitted to Bankstown-Lidcombe Hospital for recurrent falls. She reported right lower chest-wall pain and breathlessness. Her temperature was 37.3°C, her respiratory rate was 20/minute, and her oxygen saturation was 89%, with reduced breath sounds at the left lung base. Chest radiographs revealed an abnormal opacity at the left lower base thought to be pneumonia, which was considered newly developed when compared with radiographs taken 6 weeks earlier. She was given oxygen and antibiotics.

After 2 days, she was noted to be delirious. An urgent computed tomography scan of the chest showed an unexpected massive left-sided diaphragmatic hernia, with her left hemi-thorax filled with the stomach, small bowel loops, and colon. The left lung was collapsed, and there was liver haematoma caused by contusion from recurrent falls. Shortly after, the patient sustained a cardiac arrest and died presumably from major respiratory complications secondary to this massive left-sided diaphragmatic hernia.

DISSCUSSION
In hindsight, the chest radiographs taken on admission likely represent an earlier stage of diaphragmatic hernia. Diaphragmatic hernia is a rare cause of breathlessness, which is a common complaint in elderly patients. It can be either congenital or acquired. A blunt force injury may cause sudden raised intra-abdominal pressure and lead to diaphragmatic rupture and herniation of intra-abdominal content into the pleural cavity. Diagnosis is often delayed in up to 70% of cases, and plain chest radiography can confirm the diagnosis in only 17% to 40% of patients.\textsuperscript{1,2} Diagnosis can be further compromised as herniation of the intra-abdominal viscera frequently occurs much later after the initial traumatic event.\textsuperscript{3} Left-sided herniation is far more common than right-sided herniation, owing to congenital weakness of the diaphragm on the left and the liver protecting against herniation on the right.\textsuperscript{4}

In the absence of other intra-abdominal injuries, the diaphragm can be safely repaired by laparoscopic techniques.\textsuperscript{5} However, the death rate remains high, and age is a significant adverse factor for survival.\textsuperscript{4} Our patient probably developed left-sided diaphragmatic hernia after blunt trauma to the contralateral side due to a fall. Breathlessness and falls are common among older people. In this case, the two were closely related with a deadly consequence.
CONTRIBUTORS

DKYC designed the study. All authors acquired the data, analysed the data, drafted the manuscript, and critically revised the manuscript for important intellectual content. All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

CONFLICTS OF INTEREST

All authors have disclosed no conflicts of interest.

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ETHICS APPROVAL

The patient was treated in accordance with the Declaration of Helsinki. The patient’s relatives provided informed consent for the treatment/procedures and consent for publication.

REFERENCES