



Transposition of the great indwelling pleural catheter

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A 70-year-old male with sarcomatoid renal carcinoma presented to his general practitioner with worsening breathlessness. He was referred to the radiology department for a radiograph of the chest, which showed recurrence of a known right malignant pleural effusion (MPE) (figure 1A). After 4 days, he underwent an uncomplicated right indwelling pleural catheter (IPC) insertion and drainage. The postprocedure radiograph of the chest (figure 1B) showed improved appearances of the right MPE and a new small left pleural effusion that had been seen on the preprocedure ultrasound and likely progressed since his presenting radiograph. The radiographer's report raised concerns that the right IPC tip was positioned too far to the left of the midline. A radiology opinion, similar to the impression of the clinical team, suggested that a rotated film may explain the appearance.



Figure 1 (A) Predrainage radiograph of the chest showing a large right pleural effusion. (B) Post right IPC insertion procedure radiograph of the chest showing significant reduction in the size of the right pleural effusion and a small left-sided pleural effusion. (C) Three-dimensional reconstruction of the subsequent contrast-enhanced CT scan of the thorax.

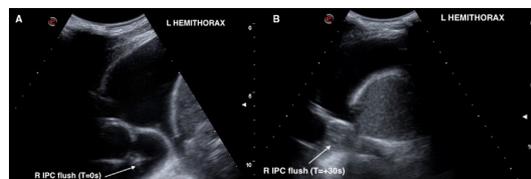


Figure 2 (A) Ultrasound identification of the right indwelling pleural catheter (R IPC). (B) Flushing of the R IPC with normal saline under real-time ultrasound vision.

Subsequently, a CT scan demonstrated that the IPC did cross the midline (figure 1C), but did not clarify whether the left pleural space had been truly entered. The patient was invited to attend clinical review.

Detailed thoracic ultrasound examination of the left hemithorax identified displacement of the right mediastinal pleura so that it lay within the left hemithorax; the tip of the right IPC was therefore visible within the left hemithorax (figure 2A). Flushing and drainage of the IPC under real-time ultrasound vision confirmed that the left pleural space had not been breached (figure 2B).

A literature search and multidisciplinary review of the thoracic radiology, including historic imaging, excluded the presence of any congenital anomalies or pre-existing anatomical variation. A repeat CT 4 weeks following IPC insertion demonstrated complete resolution of the abnormality. We therefore concluded that the right pleural space extended to the left of the midline, secondary to volume effects of the previous undrained large effusion and this resolved with drainage. The IPC remains in situ and continues to function well.

Given the increasing evidence supporting the use of IPCs and their increased uptake in recent years for the management of pleural pathology, clinicians should be alert to this occurrence, which to the best of our knowledge has not been previously reported.

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