

Pitfalls of single lung transplantation (SLT) for chronic obstructive pulmonary disease

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Accepted 22 March 2014

DESCRIPTION

Figure 1 demonstrates two complications of single lung transplantation (SLT) in chronic obstructive pulmonary disease (COPD). First, the image shows hyperinflation of the native right lung causing compression of the graft lung. In one study, patients with SLT showed no evidence of flow limitation at rest, but the majority of patients did show evidence of dynamic hyperinflation during exercise. Unsurprisingly, patients who underwent bilateral lung transplantation (BLT) showed no evidence of flow limitation at rest or during exercise. This finding likely accounts for the known decreased exercise tolerance seen in SLT versus BLT patients.¹

The image also shows evidence of malignancy in the native lung (red arrows). These were biopsy-proven adenocarcinomas. There is increased incidence of lung cancer found in the native lung of patients with SLT. One review showed lung cancer incidence of up to 6.9% in the native lung after the transplant. There have been only occasional reports of lung cancer in donor lungs. The presence of a native lung is the strongest risk factor for developing lung cancer in post-transplant patients.²

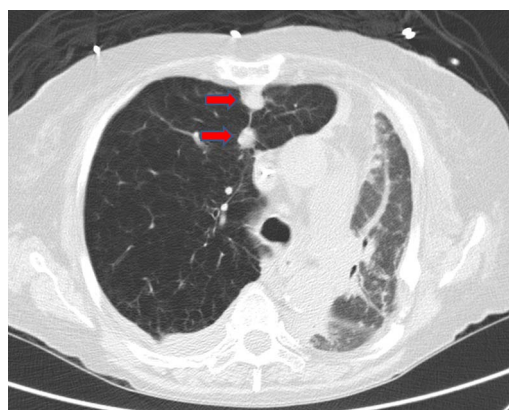


Figure 1 CT image demonstrating malignancy and hyperinflation of the native (right) lung in a patient who had received a single lung transplantation for chronic obstructive pulmonary disease.

These are two examples of what may account for the worse survival noted in patients with COPD under 60 years who undergo SLT versus BLT. There is also a trend towards improved survival with BLT over the age of 60 years; however, no sufficiently powered studies in these patients have been completed to show significant mortality improvements.³

Learning points

- ▶ Patients who underwent bilateral lung transplantation (BLT) have improved exercise tolerance and pulmonary function tests compared with single lung transplantation (SLT), likely secondary to dynamic hyperinflation of the native lung.
- ▶ There is increased risk of lung cancer in the native lung in patients with SLT due to chronic obstructive pulmonary disease.
- ▶ BLT has shown improved median survival compared with SLT in patients under 60 years.

Contributors All authors contributed to the research, drafting and revision of this manuscript.

Competing interests None.

Patient consent None.

Provenance and peer review Not commissioned; externally peer reviewed.

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To cite: Singhal A, Reed RM. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2014-204355

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