

# Case Report

## Successful lung transplantation for heroin abstainer: A case report

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**ABSTRACT** A 41-year-old man suffering from end-stage emphysema induced by heroin addiction successfully underwent right single-lung transplantation. The patient is in good health without heroin relapse for more than 4 years.

**Key Words:** lung transplantation; heroin abstainer

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### Introduction

Lung transplantation (LT) is an effective way to deal with the end-stage pulmonary diseases. Heroin addiction is an obstacle for LT (1), to our knowledge, there was no case report for this until now. We report a case of end-stage emphysema induced by heroin addiction, which was successfully treated by single lung transplantation.

### Case report

A 41-year-old man complained of progressive dyspnea for 5 years. Six months before his admission to our institution, he had a history of using heroin over 11 years, initial inhalation for 8 years and later injection for 3 years. His CT scans (Fig 1A) demonstrated the severe bilateral emphysema. The forced expiratory volume in 1 second (FEV1) was 0.37 L (10% of the predictive value). After discussion with the local ethics committee, he was considered for lung transplantation. During the 2 month period on waiting list for suitable lung, several times of blood tests were performed and the result demonstrated the negative heroin administration. On April 17, 2006, he underwent right single-lung transplantation with the permission from the local ethics committee and the consent of the patient. His procedure was similar with other LTs. The right pneumonectomy was then performed. The

bronchial anastomosis was performed by using a running 4-0 prolene suture for the posterior membranous wall, and interrupted horizontal mattress sutures with 4-0 monocryl for the cartilaginous wall. The pulmonary artery and left atrial anastomoses were all performed by using a running 4-0 prolene suture.

The patient was re-explored due to active pleural hemorrhage 1 day postoperatively. He frequently requested by writing for muscle injection of pethidine which is the well-known substitute for heroin in Chinese drug abuser in the first 4 days postoperatively. But he could not remember anything about the requests 7 days later. The patient was completely weaned from the respirator 5 days postoperatively. The rest of his postoperative stay was uneventful. He became oxygen free at 1 month postoperatively.

Forty days after the transplantation, he was discharged from the hospital. His maintenance immunosuppressive agents are tacrolimus, mycophenolate mofetil and methylprednisolone. Fifty-two months after the operation, the FEV1 was 1.84 L (43% of the predictive value). At present, 57 months after lung transplantation (LT), the patient is in good health (Fig 1B) without clinical evidenced acute or chronic rejection and heroin relapse.

### Comment

Heroin abuse typically produces well-recognized syndromes associated nearly all the organs of the body. The relations between heroin addiction and the impaired lung function were often reported (2,3). Candidates with the history of substance addiction are not absolutely ineligible for LT if they have been free of the substance for more than 6 months.

However, suggestion of LT for such end-stage patients is still controversial to thoracic surgeons due to the concerns of postoperative attitude of obedience and potential heroin

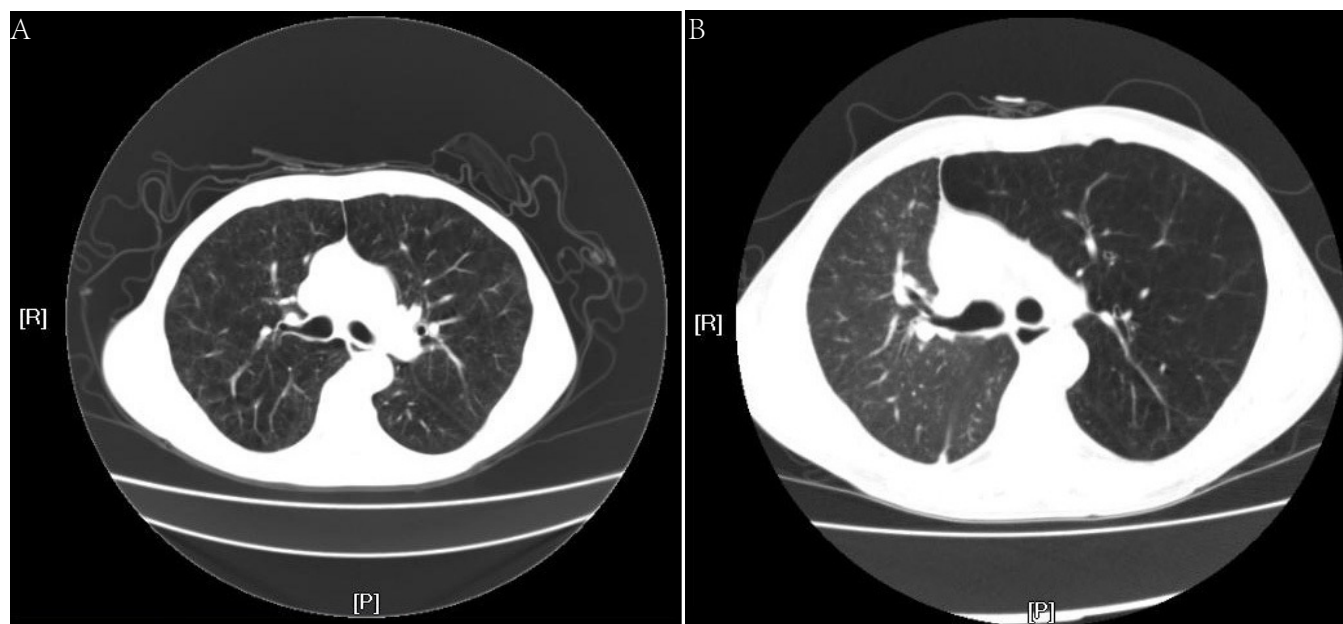
No potential conflict of interest.

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**Fig 1.** (A) Preoperative computed topographic scan showed the severe bilateral emphysema; (B) Postoperative computed topographic scan on 54 months showed the clear transplanted right lung.

relapse. The repeated episodes of relapse to drug self-administration are the primary problem for drug addiction (4,5).

This patient is an unusual case for us. The local ethics committee finally permitted his LT after carefully evaluated his situation and monitored his blood heroin as recommended in guidelines (1). His procedure was similar with other LTs, but his postoperatively subjective desires for pethidine and his oblivion of this episode was very different. There are many reports that relapse to drug abuser is more likely to occur in case of exposure to life stress (6,7). We considered this episode as a dangerous response to the surgical stress. This ever shook our belief that he could avoid heroin relapse. What delighted us is, at present, more than 4 years after LT, the patient is in good health without any signs of heroin relapse.

In conclusion, a case of successful lung transplantation for a patient suffering from end-stage emphysema secondary to heroin abuse with a follow-up time of more than 4 years is presented. This encourages us to such patients as acceptable candidates for lung transplantation.

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