Preoperative Corticosteroids
A Contraindication to Lung Transplantation?

To the Editor:

We agree with Schäfers and colleagues1 that regular preoperative administration of corticosteroids has been considered a contraindication to perform lung transplantation because the risk of a poor healing of the bronchial anastomosis. We have the experience that in patients treated with corticosteroids pretransplant, a good healing of the bronchial anastomosis can be achieved. Complications from poor bronchial anastomotic healing, however, is one aspect associated with the use of corticosteroids pretransplant. The other aspect is the postoperative outcome of patients suffering already preoperative severe systemic side effects of corticosteroids administration. In a group of 16 lung transplant patients who received routine osteoporosis prophylaxis the bone density measurements of the lumbar spine and the femur were performed pretransplant and 6 months posttransplant. The bone density decreased in 11 patients, improved slightly in 2 and remained unchanged in 3 patients. Therefore, we do not expect improvement of the severe systemic side effects in the posttransplant period when they are already apparent pretransplantation. We think that the patients who suffer severe side effects of corticosteroid therapy are at risk during the transplant and posttransplant period in respect to outcome and quality of life. It would be very interesting to hear from the Hannover group about the outcome and quality of life of patients with severe osteoporosis, pathologic fractures, and cachexia pretransplant as result of the long-standing use of corticosteroids.

In contrast to the conclusion of the colleagues from Hannover, we think that regular corticosteroid medication that has caused severe osteoporosis is still a contraindication for lung transplantation.

In patients with emphysema and long-standing use of corticosteroids, this might be a more serious problem than in patients with pulmonary fibrosis and a short-term use of high-dose corticosteroids. If the side effects are mild and the patients are otherwise acceptable candidates, the risk of postoperative morbidity is probably increased but acceptable.

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REFERENCE

To the Editor:

We appreciate the experience of Dr. de Boer and coworkers regarding corticosteroids in lung transplantation. Postoperatively, corticosteroid-related side effects are relatively common in our experience of heart and lung transplantation. Serious side effects, (i.e., osteoporosis resulting in symptoms or pathologic fractures, however, have been observed in less than 10 percent of our patients. In the lung transplant population, the occurrence of these complications was, regardless of the fact, whether corticosteroids had been part of the preoperative medication or not. We have even gone as far as accepting patients in whom osteoporosis had resulted in pathologic vertebral fractures preoperatively, and who had been rehabilitated sufficiently. There is little doubt that the degree of clinical consequences should be of primary importance in deciding whether patients can be accepted for transplantation or not. As stated in our article (Chest 1992; 102:1522-25) there is no clinical reason, however, to regard regular administration of corticosteroids as an absolute contraindication to lung transplantation.

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Determining the Size of Pneumothorax

To the Editor:

We read with interest the article by Engdahl et al.,1 which appeared in the January 1993 issue of Chest, and reiterate their concerns that plain chest radiography is an inaccurate method of determining pneumothorax size. We are concerned, however, that the effective radiation dose to the patients scanned in this interesting study is about 180 times the dose received from a conventional plain chest x-ray film, although we do note that the study received Regional Ethics Committee approval and informed consent was obtained from patients. According to the latest figures from the National Radiological Protection Board (United Kingdom),2 the absorbed dose from a conventional plain chest x-ray is about 0.05 milliSv and that from a computerized tomography (CT) scan with 10 mm contiguous slices is about 9.1 mSv.

We are currently performing a study comparing assessment of pneumothorax size on a plain frontal chest x-ray film by a panel of experienced radiologists with the pneumothorax size calculated using reconstructed axial sections from spiral CT of the chest. Using spiral CT on a Siemens Somatom Plus third generation scanner, the radiation dose to the patient is about 2.2 mSv since the scan is performed continuously using a single breath-hold with the table moving at a known speed (10 mm/s) and the tube milliampere is considerably lower. As well as the advantage of reduction in patient dose, spiral CT allows more accurate volume measurement due to elimination of misregistration artefact, which can occur with incremental scanning.

We have found that the breath-hold can be facilitated by pre-breathing 100 percent oxygen, holding breath at total lung capacity and applying a nose clamp. A potential limitation of the study is that volume acquisition can only occur over 24 cm (excluding some patients from the study), although software is now available which allows volume acquisition over a greater distance.

It will be interesting to compare results on completion of this study, but we would like to emphasize the increasing importance of optimal dose limitation in studies such as this where volume acquisition is being measured, and consideration should be given to spiral CT if available.