FLEXIBLE BRONCHOSCOPY AFTER PEDIATRIC LUNG TRANSPLANTATION: FIVE-YEAR EXPERIENCE

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Introduction:
Bronchoscopy is often performed following pediatric lung transplantation, either as surveillance or by clinical indication. We sought to describe our experience with post-lung transplant flexible bronchoscopy in pediatric patients.

Methods:
A retrospective chart review of all bronchoscopies performed in lung transplant patients at Children’s Hospital Boston over a 5-year period (4/01/2001-3/31/2006) was conducted. Indications for transplant included CF (62%), lung fibrosis (12%), re-transplantation (12%) and pulmonary hypertension (8%). All patients who were under 21 at the time of transplant were included.

Results:
A total of 276 bronchoscopies were performed in 26 patients, aged 15 months to 25 years. Forty-seven (17%) were perioperative procedures (performed within 5 days of transplant); 140 (50.7%) for surveillance; 46 (16.7%) for clinical deterioration; and 36 (13.1%) for other reasons such as airway evaluation or procedure or treatment follow-up.

Procedures performed included: bronchoscopy alone in 20 cases, bronchoalveolar lavage in 223, transbronchial biopsy in 177, protected brushing in 156, balloon dilation in 27, and stent placement in 6. Most common findings included airway narrowing or stenosis (50.0%), copious secretions (23.9%), and marked inflammation or edema (14.5%). No significant visual findings were noted in 92 (33.3%) cases.

Of the 177 biopsies, pathology was reported as normal in 72 cases (40.7%); 2 had insufficient tissue; and the rest had one or more findings. There was some degree of rejection in 49 cases (27.7%); infection or inflammation in 59 (33.3%); and other findings in 6 (3.4%), including 1 case of PTLD.

Of the 49 cases of rejection, 47 (96%) were acute: A1 in 28 cases (57% of the total); A2 in 18 (37%); and A3 in 1 (2%). Thirty-five (74.4%) of the cases with acute rejection were found during a surveillance bronchoscopy, including 21 of the 28 (75%) cases graded as A1, and 14 of the 19 (73.7%) graded A2 or higher.

Complications occurred in 16 cases (5.8%), of which 7 (2.5%) required some degree of intervention. Complications included pneumothorax (6), desaturation (5), significant bleeding (4), and hypotension or anesthetic problems (4). 271 patients (98.2%) were discharged or admitted as previously planned. Four patients were admitted due to complications: 1 to the ICU and 3 to the inpatient floor. There were no deaths related to the procedure.

Conclusion:
Bronchoscopy can be safely performed in pediatric patients after lung transplantation, with significant complications occurring less than 3% of the time.

The majority of cases of rejection were diagnosed during a surveillance bronchoscopy, both for grade A1 and for grade A2 or higher. These results underline the importance of periodic and regular surveillance in these patients.