Endoscopic ultrasound-guided mediastinal mass biopsy in an undiagnosed pediatric liver transplant recipient

A 6-year-old girl with biliary atresia underwent a left-sided partial liver transplantation at the age of 1 year, starting immunosuppressive therapy thereafter. She developed portal cavernoma after liver transplantation, which was not treated by shunt meso-rex or interventional radiology. At the age of 5 years, she developed mediastinal lymphadenopathy and pleural effusion due to thoracic duct leak (chylothorax), necessitating bilateral pleurodesis, which resolved the decompensation. After a few months without symptoms, she developed respiratory insufficiency, fever, and cough, requiring oxygen therapy.

Computed tomography showed enlarged mediastinal lymph nodes, multiple abdominal lymph nodes, thickening of pulmonary interlobular septa, ground-glass opacities in the pulmonary parenchyma, bilateral large pleural effusions, and ascites with signs of portal hypertension (esophageal varices, collateral vessels, and splenomegaly) (▶Fig. 1). Laboratory findings revealed elevated erythrocyte sedimentation rate and other acute phase reactants, anemia, leukopenia, eosinophilia, hypergammaglobulinemia, and impaired delayed hypersensitivity on skin testing.

A double infection with rhinovirus and pneumococcus involving abdominal and mediastinal lymph nodes was suspected. Considering the negative autoimmune antibody tests, a multidisciplinary board meeting was conducted, in which the decision was made to perform endoscopic ultrasound (EUS) to obtain tissue specimens from the mediastinal masses for histological and microbiological analyses.

Pediatric EUS-guided tissue acquisition (EUS-TA) of mediastinal masses is challenging and difficult. It is rarely performed even in tertiary centers, particularly in patients receiving immunosuppressive therapy and those with a large pleural effusion. Moreover, a standard EUS scope is excessively large for a 6-year-old girl with malnutrition. Therefore, we decided to perform transesophageal EUS with bronchoscope-guided fine-needle biopsy (EUS-B-FNB) (▶Fig. 2, ▶Video 1) to prevent injury due to the large EUS scope. EUS-B-FNB showed multiple hyperechoic mediastinal masses and pleural effusion. Therefore, we obtained tissue samples for histological examination using three passages of a 22-G needle. The results revealed infiltration of lymphatic cells...
This pediatric case demonstrates that EUS-TA is technically feasible and, in some cases, useful for providing fundamental diagnostic information in liver transplant recipients. Importantly, EUS-TA can be extremely useful, as previously mentioned, for the management of life-threatening cases in which malignancies and post-transplant lymphoproliferative disease should be excluded to guide the appropriate treatment.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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