Pulmonary Hypertension and Liver Transplantation

To the Editor.—We read with interest the reports by Prager et al. and Cheng et al. on pulmonary hypertension (PH) in two patients with end-stage liver disease.1,2 We agree that liver transplantation in patients with PH requires complex management and carries a high perioperative mortality.

At the University of Pittsburgh, we have had experience with seven patients with end-stage liver disease and moderate to severe PH (range of systolic pulmonary arterial [PA] pressure: 55–79 mmHg). All of these patients were challenged with pulmonary vasodilators before or during surgery, including nitroglycerin, prostaglandin E1, and nifedipine, and none of them had a significant decrease in PA pressure. Five patients underwent liver transplantation; two of these patients died intraoperatively, two died in the early postoperative period (one of these patients was described in a previous report3), and one patient survived. One patient died while waiting for a liver transplant, and the last patient continues to await liver transplantation.

In addition to these seven patients, six patients with moderate to severe PH (range of systolic PA pressure 65–110 mmHg) are still under evaluation. However, three of these patients have died during the evaluation period. This high preoperative mortality rate reflects the dismal outcome of PH associated with portal hypertension: the mean survival after diagnosis has been reported to be 15 months, which is worse than in patients with PH alone.4

In our experience, patients with significant PH may survive liver transplantation only if they have good right ventricular function, have no other significant disease (such as coronary artery disease), have an expedient surgical procedure, and receive a graft of excellent quality. Any significant complication (e.g., sepsis, pulmonary infection, poor graft function) will likely result in death.

Despite the high risks, we have had one long-term survivor (20 months as of August 1992) after orthotopic liver transplantation.5 Intraoperatively, the PA pressure was as high as 100/50 mmHg. Although this patient had an unstable intraoperative and postoperative course, he survived with good liver function. In contrast to the findings of Prager et al.,1 this patient had normalized PA pressures when catheterized 1 yr after surgery. Thus, it appears that PH, on occasion, can be reversed by successful liver transplantation. Reversibility of PH may depend on several factors, as suggested by Prager et al.

In Reply.—It is not surprising with the increasing number of liver transplants that more anesthesiologists are encountering patients with liver failure and pulmonary hypertension. The experience of DeWolf et al. with their small series of liver transplant patients with pulmonary hypertension reinforces the fact that these patients have a high perioperative mortality rate.

The main reasons for organ transplantation are to improve lifestyle and increase longevity. If these goals are not achieved, the progression of liver disease results in death. To achieve the goals of liver transplantation, it will be necessary to develop strategies that will improve perioperative care for patients with PH.

References


