Answer

Obtain a Biopsy Specimen of the Hepatic Mass

Figure 1. Computed tomographic scan of the liver.

Figure 2. Magnetic resonance imaging of the liver.

The computed tomographic and magnetic resonance images demonstrated a 6.6-cm lesion of the medial and lateral segments in the left lobe of the liver, peripheral biliary ductal dilatation in both lobes, and obstruction of the common hepatic duct. A biopsy of this lesion was diagnostic of malignant B-cell lymphoma and was positive by in situ hybridization for the Epstein-Barr virus. Serologic analyses confirmed posttransplantation infection by the Epstein-Barr virus. Immunosuppression was discontinued, temporary biliary stenting via endoscopic retrograde cholangiopancreatography was accomplished, and chemotherapy with cyclophosphamide, adriamycin, rituximab, and prednisone was initiated. Five months later, the mass resolved, renal and hepatic function were preserved (serum creatinine, 1.6 mg/dL [141.4 µmol/L]); total bilirubin, 0.4 mg/dL [6.84 µmol/L]), and low-dose immunosuppression has been reinstituted with cyclosporine microemulsion and prednisone.

Posttransplantation lymphoproliferative disease is the second most common malignancy after solid organ transplantation (squamous cell carcinoma of the skin is the most common) and occurs in approximately 2% of recipients.[1] The frequency of posttransplantation lymphoproliferative disease is increased by the high doses of immunosuppressive agents for induction or the treatment of rejection. The clinical signs and symptoms are highly variable and include lesions found in the allograft itself or, as in this case, in remote sites. The time of initial symptoms ranges from 1 month to many years posttransplantation, with a median onset of about 1 year.[2] Demonstrably associated with the Epstein-Barr virus in 80% of cases, these lesions are usually of B-cell lineage and are believed to result from decreased immunosurveillance induced by pharmacologic immunosuppression.[3] Treatment is based on the location and aggressiveness of the lymphoma itself and on whether the allograft can be sacrificed in stimulating recovery of the immune response. On occasion, reduction of the level of immunosuppression alone suffices to induce regression of the tumor(s).[4] Other strategies that may be used in combination with reduced immunosuppression include chemotherapy, radiation, surgery (allograft removal may be appropriate), anti-viral medication (acyclovir, ganciclovir), alpha interferon, and newer therapies, including monoclonal antibodies targeting B-cell surface antigens and Epstein-Barr virus–specific cytotoxic lymphocytes. The prognosis of posttransplantation lymphoproliferative disease is difficult to predict due to the wide range of clinical scenarios involved, but reported survival rates range from 27% to 45%.[5]

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REFERENCES

1. Penn I, Hammond W, Brettschneider L, Starzl TE. Malignant lymphomas in transplantation patients. *Transplant Proc.* 1969;1:106.
2. Nelson BP, Nalesnik MA, Bahler DW, et al. Epstein-Barr virus-negative posttransplant lymphoproliferative disorders: a distinct entity? *Am J Surg Pathol.* 2000; 24:375-385.
3. Dotti G, Fiocchi R, Motta T, et al. Lymphomas occuring late after solid-organ transplantation: influence of treatment on the clinical outcome. *Transplantation.* 2002; 74:1095-1102.
4. Manz MG, Berger C, Horny HP, et al. Sustained remission of an extensive monoclonal, Epstein-Barr virus-associated diffuse large B cell lymphoma in a kidney-pancreas transplant recipient. *Transplantation.* 2002;73:995-997.
5. Borges E, Ferry JA, Friedmann AM. Epstein-Barr virus-negative precursor B cell lymphoblastic lymphoma after liver transplantation: a unique form of posttransplant lymphoproliferative disease. *Transplantation.* 2002;73:541-543.

Submissions

Due to the overwhelmingly positive response to the "Image of the Month" feature, the *Archives of Surgery* has temporarily discontinued accepting submissions for this feature. It is anticipated that requests for submissions will resume in about 1 year. Thank you.