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## How to Manage Vascular Complication in Recipient

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Vascular complications following liver transplantation may be treated effectively using endovascular interventional managements including embolization, balloon angioplasty, stent placement, thrombolysis, or thrombectomy. Balloon angioplasty has become widely accepted as a safe and effective primary method to treat vascular stenosis. However, it has several limitations, such as high incidence of elastic recoiling, early recurrence, and a risk of anastomotic dehiscence. In our previous experiences, 1-year recurrence rates were 20% (3/15) and 25% (9/36) in PV and HV, respectively, following balloon angioplasty. In comparison, stents have usually been used to treat elastic or recurrent stenosis after balloon angioplasty, because stents also have several potential complications, such as in-stent stenosis, thrombosis, functional stent stenosis in a child, and difficult surgical procedure if re-transplantation becomes necessary. Despite these limitations, stent placement is a preferred method because of excellent early outcome as well as an acceptable long-term patency. In our experiences, 5-year primary patency rate of PV stents was 96% in 257 adult liver transplant recipients. In HVs, overall primary patency was not excellent; 1-, 3-, and 5-year primary patency rates were 74, 66, and 61%, respectively. However, stent patency was quite different according to a location (or diameter) of a HV. In a group with major HVs (12-14-mm-diameter stents), 3- and 5-year primary patency rates were 83% and 79%, respectively; in comparison, in a group with accessory HVs (6-8-mm-diameter stents), the rates were 43% and 37%, respectively. Recent data have shown encouraging results of endovascular treatments for treating hepatic arterial stenosis or thrombosis; however application of endovascular treatment is still controversial, and surgical treatment is usually considered as the first-line treatment. We had experienced successful hepatic arterial recanalization in 16 recipients using endovascular treatment; however clinical success rate (alive >3 months) was only 50%. In summary, interventional treatment is an effective treatment modality to manage vascular complications after liver transplantation. Long-term patency of stents seems to be acceptable, although balloon angioplasty should be considered as the first-line treatment modality.