

Outcomes after portal vein stenting in cancer patients

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Objectives: To evaluate the safety and efficacy of stenting malignant portal vein occlusion or stenosis to treat bleeding varices, ascites, liver failure, or thrombocytopenia.

Methods

Between 2008 and 2015, 20 patients with malignant compromise of the portal vein were referred for percutaneous portal vein stent placement to treat bleeding varices (n=9), ascites (n=7), varices and ascites (n=1), liver failure (n=2), and thrombocytopenia (n=1). Imaging, clinical notes, additional procedures, and laboratory values were evaluated to determine technical and clinical success rates as well as complications. Overall survival and stent patency were evaluated using Kaplan Meier analysis.

Results

Portal vein stent placement was technically successful in 19 of 20 (95%) patients. 18 of 19 patients were stented from a transhepatic approach. In one patient, a trans-splenic approach was necessary to cross the occlusion. In the one technical failure, referred for variceal bleeding, the occlusion could not be crossed and the patient underwent splenic artery embolization. Two patients had “kissing stents” placed (portal vein into the SMV and IMV; portal vein into the left gastric vein and SMV). Immediately after stent placement, portography showed improved hepatopedal flow in 18 of 19 patients, and decreased or no filling of varices in all 9 patients with that indication. The major complication rate was 5%: one immediate in-stent thrombosis requiring thrombolysis. Mean overall survival after stenting was 6.6 months (Kaplan Meier estimate). Primary stent patency at 6 months was 58% (Kaplan Meier estimate). 5 of 9 (56%) patients who underwent stenting for variceal bleeding had no further bleeding episodes (mean follow up interval of 5.5 months). Of the 8 patients who underwent stent placement for ascites, 1 had decreased ascites, 5 had evidence of persistent or increased ascites, and 2 had no follow up. Of the 2 patients with liver failure, 1 patient with a concurrent biliary drain had improved liver function after portal vein stenting and 1 had persistent liver failure and received a liver transplant. In the patient who had the stent placed for thrombocytopenia, the platelet count returned to normal within 2 weeks after stent placement.

Conclusions

Transhepatic stenting of the portal vein is safe and potentially effective for treating variceal bleeding secondary to malignant portal vein compromise. Stenting may benefit patients with thrombocytopenia, but was not an effective treatment for ascites.

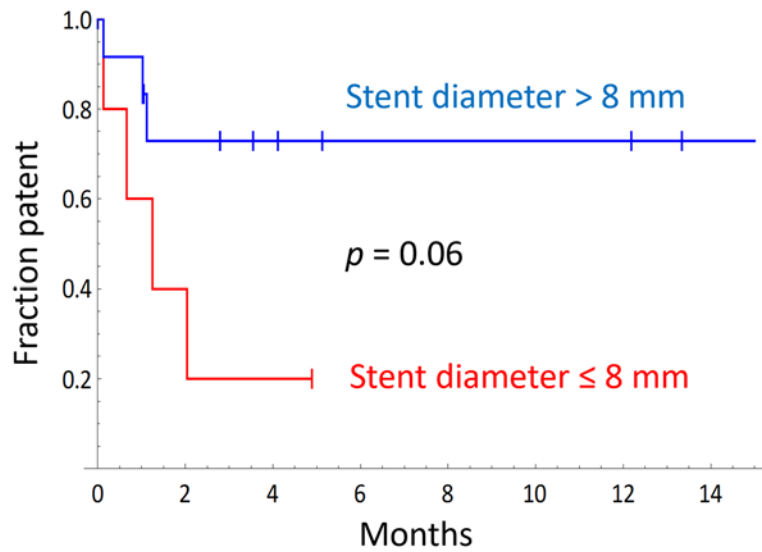


Figure. Primary stent patency for ≤ 8 mm stents (red) and > 8 mm stents (blue). $p = 0.06$ (log rank test). No difference in stent patency for patients receiving versus not receiving anticoagulation ($p=0.40$).