

# AMPLATZER® Vascular Plug II Case Study

## Portal Vein Embolization with the AMPLATZER® Vascular Plug II

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### History

A 55 year old male with rectal carcinoma and liver metastases was referred for portal vein embolization. He had undergone resection of the primary tumor in October 2007 and subsequent chemotherapy. In April 2008, liver metastases were discovered and he underwent a laparoscopic partial right hepatectomy and intraoperative RFA of select lesions not included in the resection. In early 2009 new mets were discovered in the residual right lobe as well as segments 4A and 4B. A portal vein embolization was performed in an attempt to allow for an extended right hepatectomy.

### Procedure

Ultrasound guidance was used to access a peripheral right portal vein branch. A portal venogram (Figure 1) was performed demonstrating normal portal venous anatomy. The catheter was exchanged for a Cook® 5Fr, 45cm Ansel sheath. A Cook 4Fr, 65cm Kumpe Slip-Cath® was used to select the left portal vein branch supplying Couinaud segment 4B. 100-300 micron BioSphere® Embosphere® particles were injected into this branch followed by 500-700 micron BioSphere Embosphere particles until the flow was nearly static. The sheath was then advanced the rest of the way into the branch, tracking very easily over a 0.035" Terumo® Glidewire/Slipcath combo.



Figure 1

A 6mm AMPLATZER® Vascular Plug II (AVP II) was easily advanced through the sheath and into this portal vein branch. Prior to detachment of the AVP II, angiography was performed to assure proper positioning of the device. The AVP II was deployed and complete stasis was obtained within 30 seconds (Figure 2, next page). A left portal venogram demonstrates persistent flow into segments 4A, 2 and 3 (Figure 3, next page).

The Cook Kumpe Slip-cath, 5Fr IM catheter, 4Fr Simmons 1 Slip-cath and an AngioDynamics 5Fr SOS OMNI® Selective Catheter were used to access the remaining segment 4A branch as well as the right lobe

segments. Embolization was then carried out, using the same technique, with deployment of AVP II devices ranging in size from 4mm to 8mm depending on vessel diameter. A final portal venogram was obtained demonstrating flow only into segments 2 and 3 (Figure 4).

### Follow-up

The referring surgeon took the patient to the OR intending to perform an extended right hepatectomy. Upon exploring the patient, he was found to have metastatic implants on the duodenum and was therefore unresectable. These lesions were small and not seen on CT, even in retrospect. Although a percentage increase in the size of the functional liver remnant was not provided, the surgeon reported that the lateral segment of the left lobe had hypertrophied appropriately.

### Conclusion

The AMPLATZER Vascular Plug II worked very well for this case, particularly in combination with a 5Fr Ansel sheath. I was able to navigate rather sharp turns with the sheath and the AVP II tracked very easily through the sheath and into position. The occlusion times were also rapid which helped to shorten what is typically a lengthy case.



Figure 2



Figure 3



Figure 4



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