

**Liver**

# **IntelliBlate Microwave Ablation System Case Study**

Dual Probe Microwave Ablation for Large HCC Lesion\*



# Patient History

58 year-old male with hepatitis C related cirrhosis. Imaging showed a hepatic dome lesion which was greater than 5 cm.

The patient had a MELD score of 8, Child-Pugh Class A5, and an ECOG status of 0. The patient also had a history of poor follow up with the transplant hepatology clinic.



## Procedure performed by:

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# Treatment Selection

The patient was referred to interventional radiology. Initially treated with yttrium-90 radioembolization; the goal was down staging for a possible future liver transplant. Viable disease confirmed by imaging at 6 weeks and 3 month post-treatment possibly due to aberrant supply. Repeat imaging was performed with definitive arterial enhancement. It was decided to treat the lesion with percutaneous image-guided microwave ablation (MWA); this has demonstrated to be an effective option for patients with HCC awaiting liver transplant.<sup>1,2</sup> The IntelliBlate System was selected for the MWA treatment platform since the lesion was at the hepatic dome, and there could potentially be impact on the surrounding tissue and structures. This system also enables predictability of the ablation zone, and the ability to alter the time and wattage appropriately.

## MRI following Y-90 radioembolization



Arterial phase



Subtraction

Arrow above shows location of liver mass

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*“The IntelliBlate System supports dual probe workflows with linked and/or independent channel controls enabling treatment of larger tumors.”*

–Dr. Pratik Shukla

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The Ximity probe is designed for consistent thermal delivery to produce a uniform spherical ablation zones. These probes also have three integrated themocouples to monitor the ablation zone and the temperature in adjacent healthy tissue and vital structures; this makes it helpful for treating hepatic dome lesions. The IntelliBlate System can also accommodate using two probes simultaneously, enabling treatment of larger hepatic lesions.\*

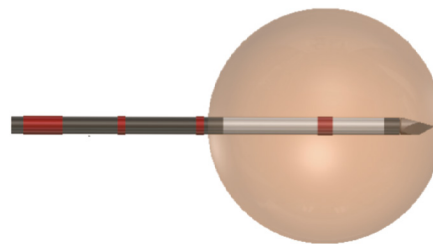
## Treatment

Under general anesthesia, two Ximity probes were inserted via an anterolateral approach in a caudal-cranial fashion and advanced to the tumor under ultrasound guidance. The IntelliBlate System was set to deliver 120W over 5 minutes for a treatment area of 5.2 cm x 3.9 cm; it was assessed that this would provide an adequate ablation zone to ensure tumor coverage and adequate margins.

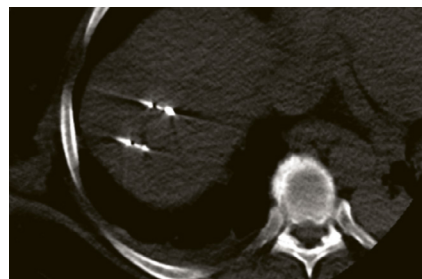
The IntelliBlate System’s real-time temperature monitoring showed the desired temperatures were achieved at the T1 thermocouple for each probe. The temperature for the T2 and T3 thermocouples were maintained at <math>50^{\circ}\text{C}</math> throughout the procedure to protect the liver capsule. A post-treatment CT scan showed no hemorrhage and an adequate ablation zone encompassing the lesion and providing good margins. There were no adverse events.



The image shows a "dual probe" ability of the IntelliBlate System.



Simulated ablation zone of the Ximity probe.



CT scan showing dual microwave probes during the ablation procedure



Real-time procedural feedback from thermocouples as shown on the IntelliBlate System interface

# Post-Procedural Results

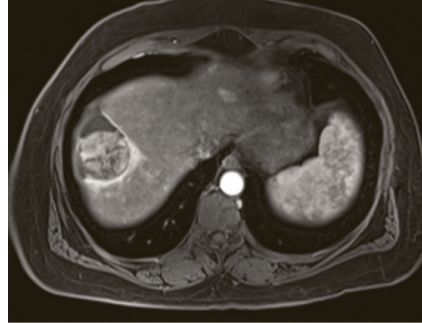
Follow up MRIs at 3 and 6 months both showed a complete response (see next page).

## Discussion

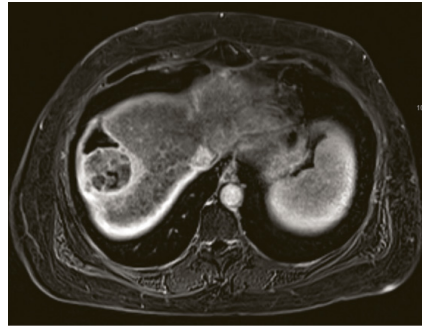
The IntelliBlate System enabled the positive outcome of complete tumor ablation while also protecting the liver capsule. Monitoring the device's output via thermocouples during treatment helped to prevent burning past the capsule or the skin. The dual probe capability enabled effective coverage of this large liver tumor.\*



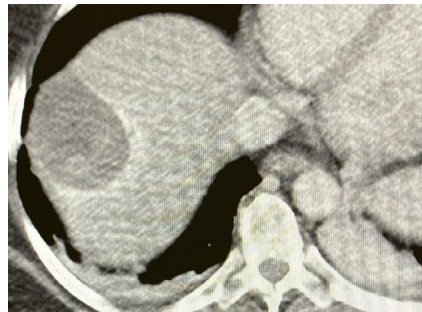
**Scan this QR code to learn more about the IntelliBlate Microwave Ablation System**



3 month follow-up MRI



6 month follow-up MRI



Post-ablation CT scan showing complete tumor ablation with sufficient margins

*\*The dual probe, simultaneous function is not commercially available in all markets. Its future availability cannot be guaranteed.*

#### **Intended Use Summary**

The IntelliBlate Microwave Ablation System is intended for coagulation (ablation) of soft tissue in laparoscopic, intraoperative, and percutaneous ablation procedures, including partial or complete ablation of non-resectable liver tumors. The IntelliBlate Microwave Ablation System is not intended for use in cardiac procedures.

The IntelliBlate Ximity Probe Assembly, used with the IntelliBlate Microwave Ablation System is intended for coagulation (ablation) of soft tissue in laparoscopic, intraoperative, and percutaneous ablation procedures, including partial or complete ablation of non-resectable liver tumors. The Ximity Probe Assembly is not intended for use in cardiac procedures.

#### **Medical Advice Disclaimer**

Rx only. Indications, contraindications, warnings, and instructions for use can be found in the product labeling supplied with each device.

Varian Medical Systems, Inc. as a medical device manufacturer cannot and does not recommend specific treatment approaches. Specifications subject to change without notice. Not all features or products are available in all markets and are subject to change.

#### *References*

- <sup>1</sup> Couillard AB, et al. Microwave ablation as bridging to liver transplant for patients with hepatocellular carcinoma: A single-center retrospective analysis. *J Vasc Interv Radiol.* 2022;33:1045-1053.
- <sup>2</sup> Som A, et al. Microwave ablation as bridging therapy for patients with hepatocellular carcinoma awaiting liver transplant: A single center experience. *Cardiovasc Intervent. Radiol.* 2021;44:1749-1754.

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