

**Liver**

# **IntelliBlate Microwave Ablation System Case Study**

Hepatocellular Carcinoma



# Patient History

A 79-year-old male previously diagnosed with hepatocellular carcinoma (HCC) due to hepatitis C with significant liver cirrhosis presented with a 3.7 cm by 2.6 cm central liver lesion in August 2024. The patient is a former smoker and an occasional wine drinker. The patient had two liver tumors treated with yttrium-90 radioembolization four years ago followed by systemic treatment with bevacizumab and atezolizumab with subsequent ramucirumab. Three years later, the patient developed two lesions near the hepatic dome which were not candidates for embolization; they were treated with a combination of tremelimumab and duravlumab. At a follow-up visit the patient's alpha-fetoprotein (AFP) and PET scan were normal. An MRI scan in June 2024 showed a new lesion located near the right portal vein branch. The patient was referred to interventional radiology for evaluation and management. Ablative treatment was decided to be the best treatment option.



## Procedure performed by:

Jaimin Shah, MD, MBA, FSIR

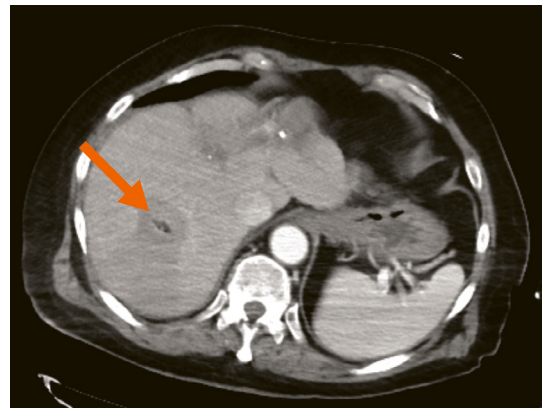
System Associate Medical Director  
Interventional Radiology

Morristown Medical Center Atlantic Health  
System

Morristown, New Jersey

# Assessment and Treatment Selection

The plan was to treat the tumor with percutaneous image-guided microwave ablation (MWA). The IntelliBlate Microwave Ablation System is a next-generation, microwave ablation platform for the treatment of soft-tissue tumors, including liver lesions like HCC. The Ximity probe generates large, predictable spherical ablation zones, offering a more consistent tumor coverage during ablation.



## Pre-procedure CT Scan

Arrow above shows location of liver mass

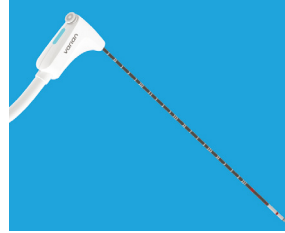
---

*“The use of IntelliBlate System simplifies planning and performing a MWA ablation procedure. The device provides consistent delivery of energy and importantly, achieved the predicted ablation zone even in the presence of fibrotic tissue in this patient with cirrhosis of the liver.”*

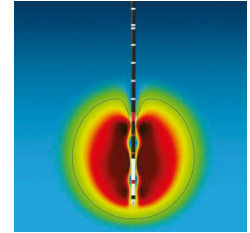
-Dr. Jaimin Shah

---

A feature of the Ximity probe are thermocouples which provide continuous temperature monitoring inside and outside the ablation zone, allowing clinicians to observe real-time temperature changes and make informed decisions, helping to protect surrounding healthy tissue and vital structures. The IntelliBlate System supports either single or dual probes.



Ximity probe utilized with the IntelliBlate System



Ximity probe produces a spherical ablation zone

## Treatment

Under general anesthesia, a single Ximity probe was inserted and advanced to the tumor using ultrasound guidance followed by a confirmatory CT scan. The IntelliBlate System was set to deliver 90W for 5 minutes over a 3.7 by 3.8 cm area. Real-time feedback from the thermocouples showed the steady temperature increase inside the ablation at  $>60^{\circ}\text{C}$  at T1 while T2 and T3 stayed  $<60^{\circ}\text{C}$ . The immediate post-ablation contrast-enhanced CT scan showed a zone of 3.6 x 4.2 cm, achieving the desired ablation and margins despite the cirrhotic tissue. No complications were encountered during the procedure.



Patient shown in CT scanner with IntelliBlate System in the foreground

## Post-Procedural Results

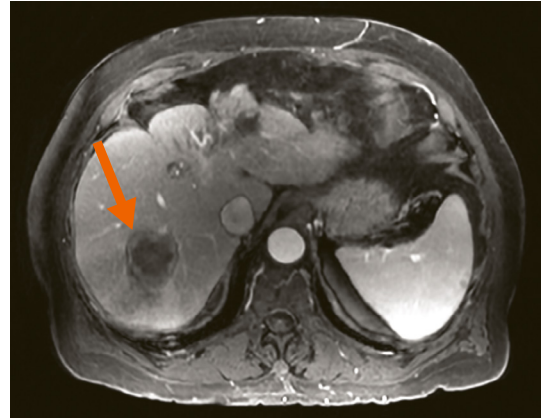
The MWA procedure was deemed successful based on postprocedural MRI and CT scans showing complete ablation of the lesion. There was also no evidence of injury to any of the adjacent structures. The patient returned to the hospital 3 days following the procedure and was treated for pain. Subsequent MRIs at 4 and 8 months following the procedure showed no evidence of residual or recurrent tumor.



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

# Discussion

The use of the IntelliBlate System simplifies planning and performing a MWA procedure by enabling the user to easily select pre-programmed ablation zone sizes without manipulating time and watts. The thermocouples allows for the real-time monitoring of the tissue temperature giving the user the ability to measure activity both inside and outside the ablation zone, if needed. The present case also demonstrated the predictability the IntelliBlate System has towards achieving the desired ablation zone, even in the presence of cirrhotic tissue.



Contrast-enhanced post-ablation CT scan showing complete tumor ablation



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

## 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.

---

Varian Medical Systems USA,  
Corporate Headquarters  
Palo Alto, CA  
Tel: 650.424.5700  
800.544.4636

---

Varian Medical Systems  
Interventional Solutions  
Headquarters and manufacturer  
9825 Spectrum Drive  
Building 2  
Austin, TX 78  
Tel: 877.467.2009

© 2025 Varian Medical Solutions USA, Inc. All trademarks are property of their respective owners.

RAD11531  
QR700026753

**SIEMENS**  
**Healthineers**