RaySearch Laboratories

IMAGE-GUIDED LIVER ABLATION MODULE*

RaySearch takes another step forward in defining comprehensive cancer care by introducing the Liver Ablation module.

As a treatment technique, liver ablation offers numerous benefits that enhance the patient experience, such as shorter procedure times (2 to 3 hours), fast recovery (patients typically leave just a few hours after the procedure), minimal side effects, and more.

With the existing tools in RaySearch products, it was a natural fit to integrate the Liver Ablation module. All of this is in pursuit of the same comprehensive goal: raising the standard of patient care.

*The module is in an ongoing development phase.

LIVER ABLATION WORKFLOW

A typical liver ablation procedure involves three main steps: 1: Planning, 2: Targeting and 3: Verification.

The procedure begins with the planning phase, during which the physician decides where to place the applicator. Once the location is determined, the applicator is inserted into the patient during the targeting step. Finally, to assess whether the desired margin was achieved, verification is performed on a post-treatment image.

RAYSEARCH IMPLEMENTATION

All three of liver ablation procedure steps are seamlessly integrated into our software, giving you full access to an advanced planning toolkit that RaySearch has been developing over many years.

1. PLANNING STEP

The Liver Ablation module offers tools for automatic segmentation of relevant structures. Combined with the ability to place virtual applicators and estimate the ablation zone, our software enables users to determine the optimal number of applicators and their precise placement with ease.

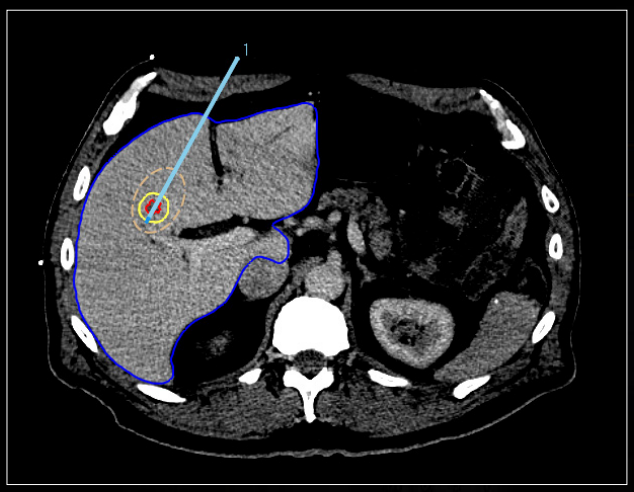
2. TARGETING STEP

To ensure accurate applicator placement before treatment, the segmented tumors from the planning phase are mapped using deformable registration, allowing for a visualization of the anticipated tumor position. Additionally, the ablation zone can be estimated based on the applicator parameters, such as its current position, selected power, and ablation duration.

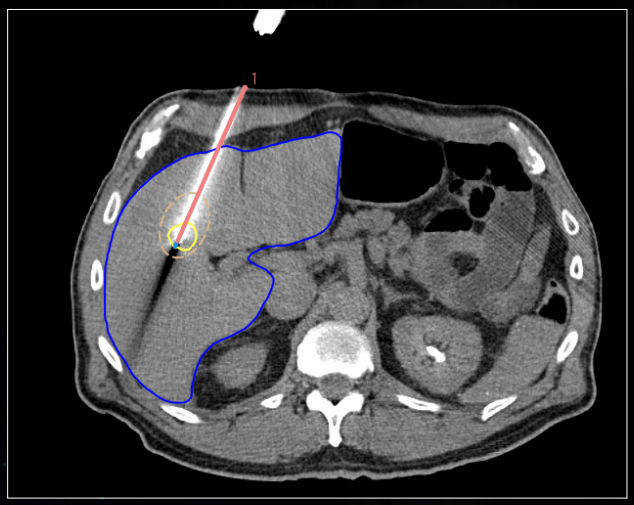
3. VERIFICATION STEP

For treatment verification, both the minimal ablative margin calculation and visual inspection based on deformable mapped tumors are provided in the Liver Ablation module.

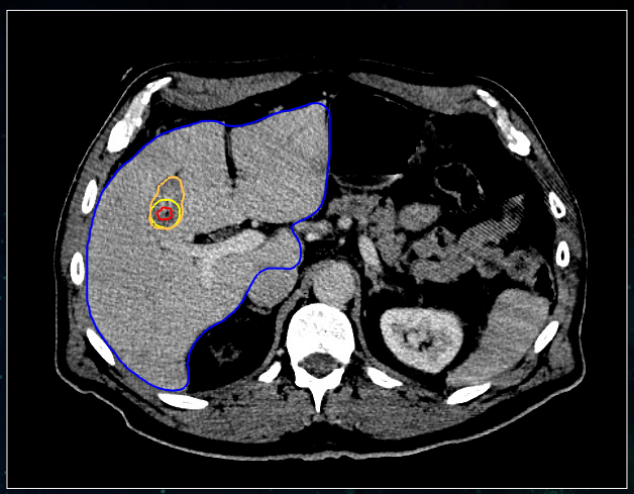
In *Paulucci et al.*, it was shown that using biomechanical deformable registration, the local disease progression risk decreased to less than 1% with an intraprocedurally confirmed minimum ablative margin greater than 4.6 mm.



1. PLANNING STEP



2. TARGETING STEP



3. VERIFICATION STEP

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