

MIT researchers develop unique imaging system for tumor surgery assistance

25 April 2019 | News

Researchers at MIT and MGH have developed an image-guided surgical system that could help surgeons better visualize and remove tiny ovarian tumors.



Ovarian cancer is usually diagnosed only after it has reached an advanced stage, with many tumors spread throughout the abdomen. Most patients undergo surgery to remove as many of these tumors as possible, but because some are so small and widespread, it is difficult to eradicate all of them.

Researchers at Massachusetts Institute of Technology (MIT) in the US, working with surgeons and oncologists at Massachusetts General Hospital (MGH), have now developed a way to improve the accuracy of this surgery, called debulking.

Using a novel fluorescence imaging system, they were able to find and remove tumors as small as 0.3 millimeters — smaller than a poppy seed — during surgery in mice. Mice that underwent this type of image-guided surgery survived 40 percent longer than those who had tumors removed without the guided system.

The researchers are now seeking FDA approval for a phase 1 clinical trial to test the imaging system in human patients. In the future, they hope to adapt the system for monitoring patients at risk for tumor recurrence, and eventually for early diagnosis of ovarian cancer, which is easier to treat if it is caught earlier.