

OCT Gives You the Power to See More

High-resolution intraoperative imaging delivers insights on margins like no other technology

Since positive surgical margins can lead to re-excisions, determining clear margins at the time of surgery is vital.¹ Traditional imaging technologies like X-ray do not have the resolution needed to visualize margins at the cellular level, and all residual disease cannot be detected in the cavity by sight or palpation. Surgeons need advanced technology support in the OR to optimize clinical decision making.



The Limitations of X-ray

Specimen radiography (X-ray) is a valuable tool, with limitations.² While 2D and 3D X-ray can confirm the presence of the lesion and identify seeds, biopsy clips, and calcifications, X-ray does not have the resolution to evaluate margins on a cellular level.³ The limitations of X-ray is evidenced by low sensitivity and specificity (36.8% and 86.8%).⁴

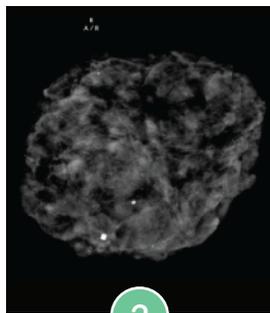
USE	OCT	X RAY
Confirm presence of lesion		✓
See seeds and clips		✓
Identify calcifications	✓	✓
Visualize ducts, blood vessels, and individual fat cells	✓	
2 mm subsurface imaging	✓	
Resolution (OCT is 10X greater)	~10µm	~1000µm

How OCT, X-ray, and Pathology Work Together



1

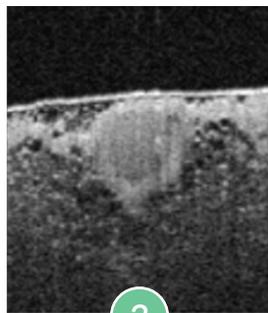
Remove the cancerous tissue



2

Perform specimen X-ray

Confirm the presence of localization device (wires, seeds, or clips) and identify calcifications.



3

Perform OCT scan of the margins

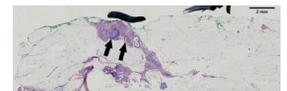
Visualize suspicious features to give surgeons real-time insight on margins.



4

Take shaves only if needed.

Decide if targeted shaves are necessary and rescanshaves.



5

Confirm results with Pathology

Evaluate final specimen with histopathology, which remains the gold standard in confirming evidence of cancer cells.

INTRAOPERATIVELY

POSTOPERATIVELY

Perimeter S-Series OCT: Made for Margins

Perimeter's S-Series Optical Coherence Tomography (OCT) device is powered by a non-invasive, optical imaging technology that uses light to visualize microscopic tissue structures and see features like blood vessels, ducts, and glands.

Benefits

- + Resolution to visualize margins at the cellular level
- + Direct correlation to histological appearance of tissue structures
- + Tissue is preserved for pathology and device does not touch the patient, enter the sterile field, or require radiation
- + Fast and portable for use in any OR, at the point of care
- + Three-dimensional, scrollable image volume with orientation labeling

10X the resolution of
X-ray and ultrasound

100X the
resolution of MRI

Cross-sectional images of tissues down to 2mm depth



Bottom Line

As the latest breakthrough technology, Perimeter's S-Series OCT is a powerful tool in elevating your decision making on margin status at the point of care.

1. Orosco, R.K., Tapia, V.J., Califano, J.A. et al. Positive Surgical Margins in the 10 Most Common Solid Cancers. *Sci Rep* 8, 5686 (2018). <https://doi.org/10.1038/s41598-018-23403-5>.
2. Pałasz P, Adamski Ł, Górska-Chrzęstek M, Starzyńska A, Studniarek M. Contemporary Diagnostic Imaging of Oral Squamous Cell Carcinoma - A Review of Literature. *Pol J Radiol*. 2017. Apr 7;82:193-202. doi: 10.12659/PJR.900892. PMID: 28439324; PMCID: PMC539a1802.
3. Naz S, Masroor I, Afzal S, et al. Accuracy of Specimen Radiography in Assessing Complete Local Excision with Breast-Conservation Surgery. *Asian Pac J Cancer Prev*. 2018;19(3):763-767. Published 2018 Mar 27. doi:10.22034/APJCP.2018.19.3.763.
4. Funk, A., Heil, J., Harcos, A. et al. Efficacy of intraoperative specimen radiography as margin assessment tool in breast conserving surgery. *Breast Cancer Res Treat* 179, 425-433 (2020). <https://doi.org/10.1007/s10549-019-05476-6>.



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