



Duke Radiology

Increasing Utilization of Contrast-enhanced Ultrasound During Abdominal Biopsies:

Impact of an Educational Training Program

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Introduction

2018-2020 U/S guided targeted liver biopsies

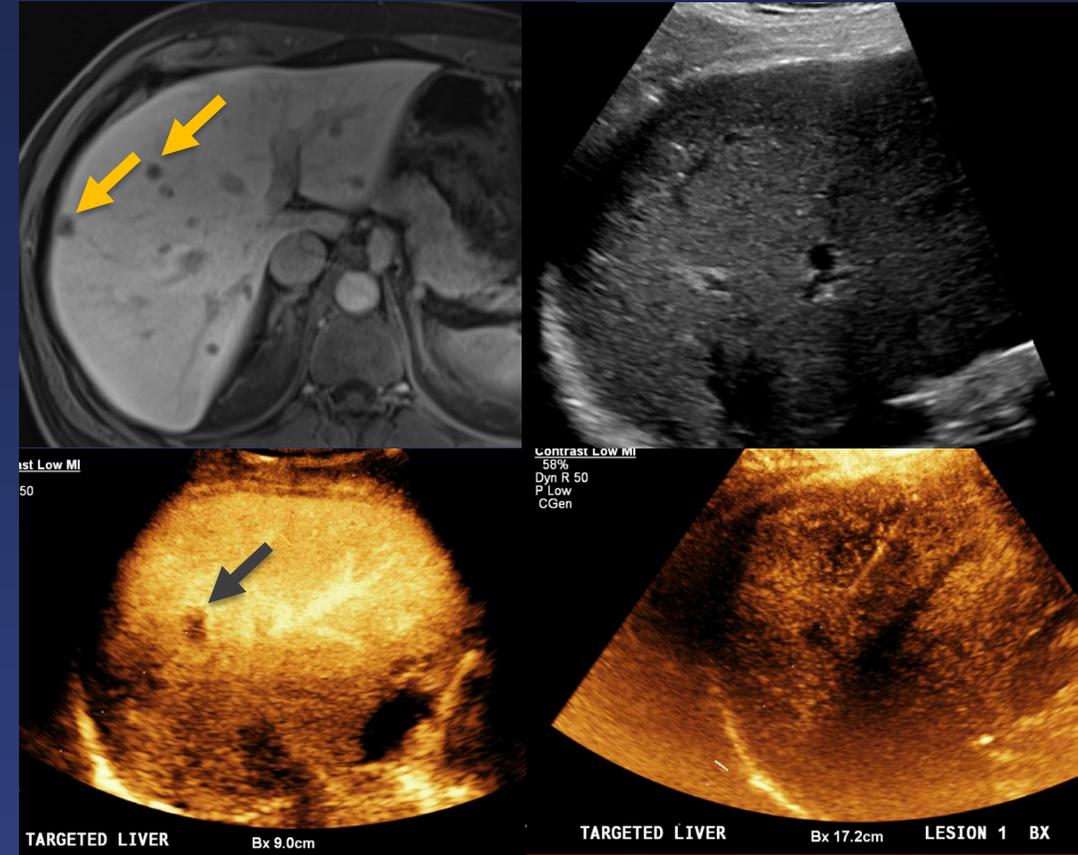
50 Liver lesions non-visualized by U/S



Introduction

- **Contrast enhanced ultrasound for solid organ biopsy**
 - Increase diagnostic accuracy (Wu W et al *Radiology* online before print 8.2.22)
 - Improve visualization of target
 - Avoid areas of necrosis or non-viable tissue
- **Quality Improvement Project Goals**
 - Increase utilization of UCA during ultrasound-guided abdominal organ biopsies
 - Reduce number of cases aborted or rescheduled for CT
 - Decrease cost and/or delays in patient care

50 y/o M newly dx CRC



Path: CRC met

Methods

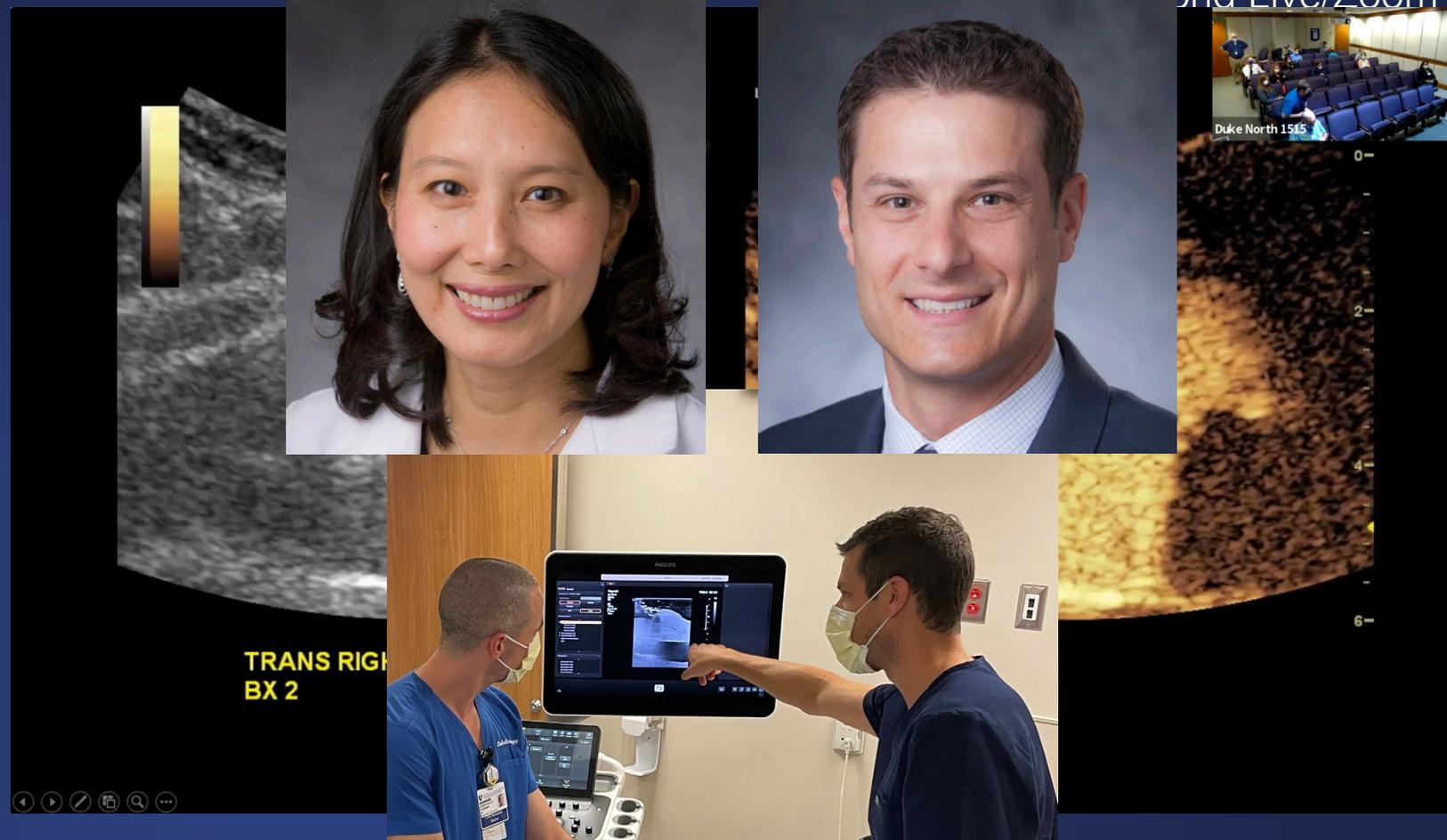
Quality Improvement Interventions

Educational Training

- Didactic teaching
- Case presentations

Direct Hands-on Teaching

- Two attendings experienced with Lumason
- Assist IR attending with Lumason administration and biopsy execution



Methods

What is the efficacy of two Educational Interventions?

Calculate %
Lumason assisted
liver and kidney biopsies
6 months before
and
6 months after
Educational Training

3:35
Mail
duke.qualtrics.com

If you did not use Lumason in the last six months please indicate the reason.
Check all that apply.

I never had a case where I thought it could be helpful.

In cases of poor lesion visibility by US, my preference is to cancel, reschedule, or use CT.

I am not comfortable with using it.

I did not use it in the last six months, but I plan to use Lumason if the need arises.

Other

What is the typical initial dose of Lumason?

0.6 mL

1.2 mL

2.4 mL

4.8 mL

Anonymous surveys

- Level of understanding
- Acceptability
- Overall experience

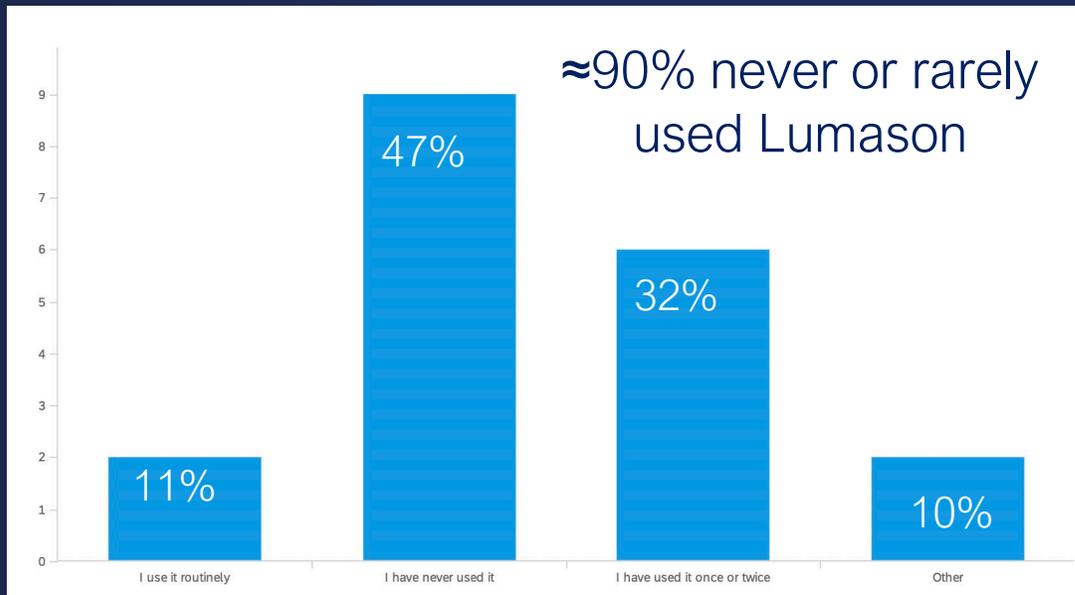
Results

- Usage of Lumason before/after Educational intervention
 - 6 months before **5.8%** (10/172)
 - 6 months after **10.0%** (16/160); $P = 0.09$
- # of attendings reported using Lumason
 - 6 months before **21.4%** (3/14)
 - 6 months after **57.1%** (8/14); $P = 0.03$; 5/8 new users



Pre-Educational Intervention Survey Results

Have you ever used Lumason?



Other:
A few times

Reasons for not using Lumason

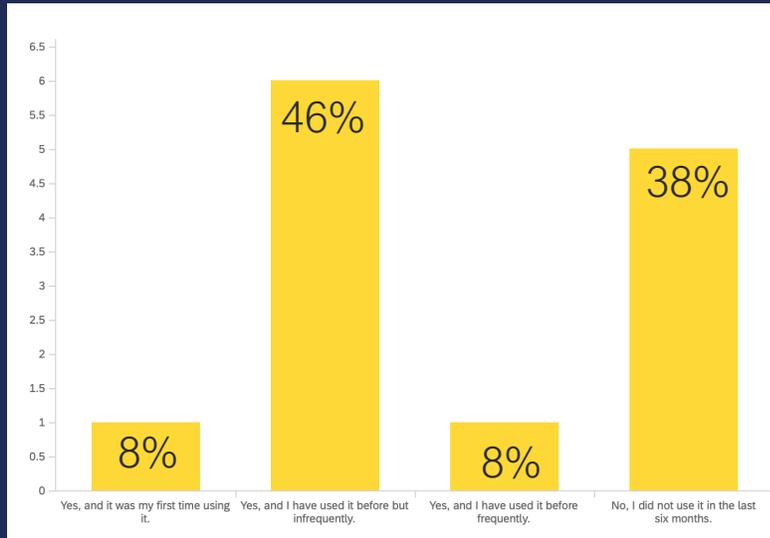


Other:
Disrupt workflow
No need

Post-Educational Intervention Survey Results

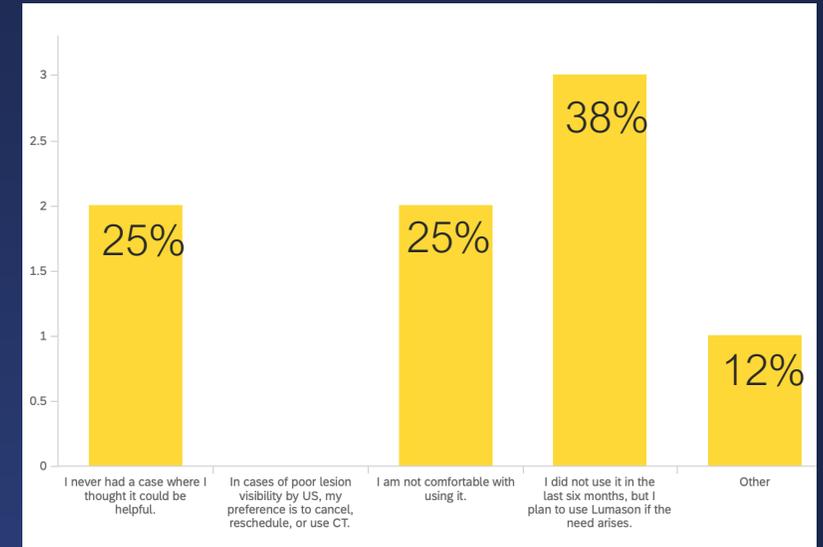
Did you use Lumason in the last 6 months?

>50% first time or previously rarely used



25% not comfortable using Lumason, decreased from >70%

Reasons for not using Lumason

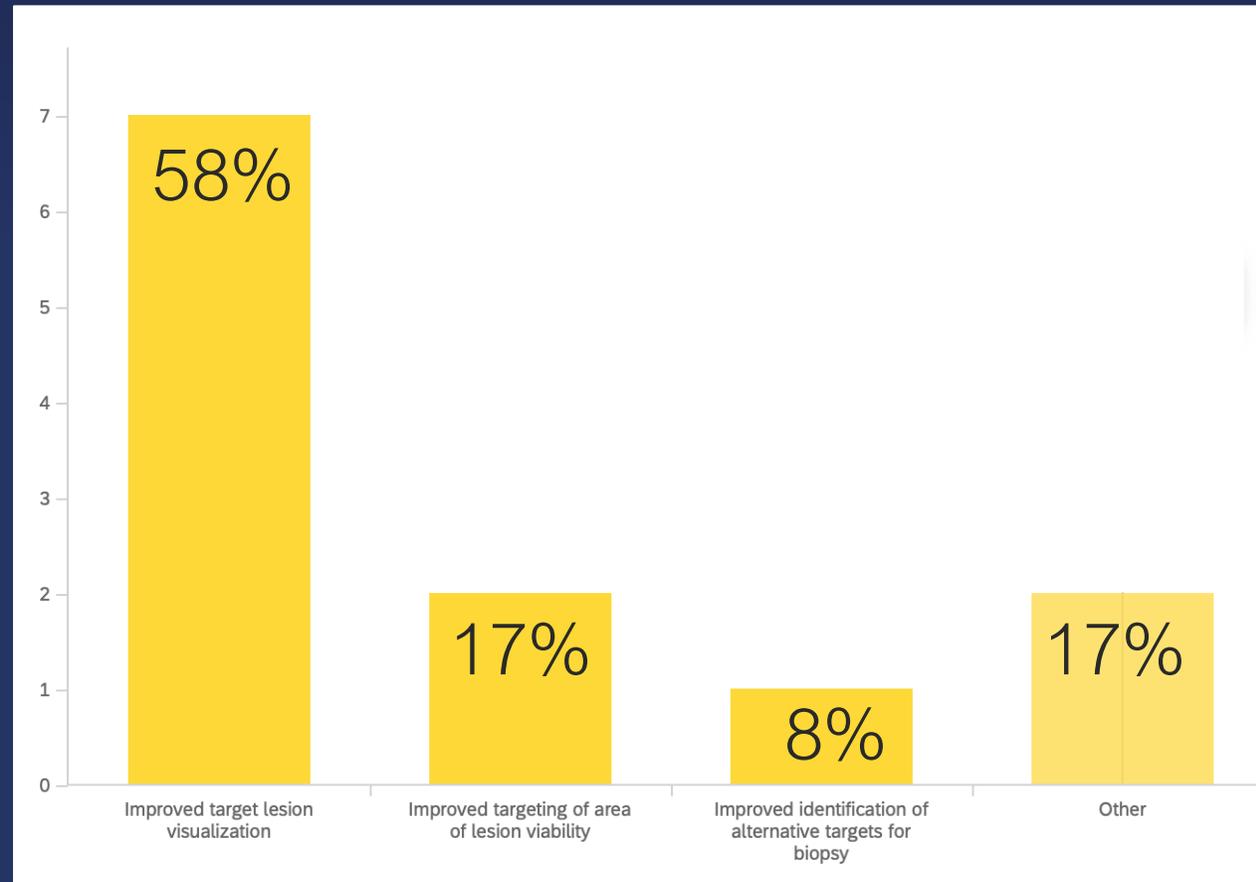


Other:
• N/A

Post-Educational Intervention Survey Results

If you did use Lumason in the last 6 months, was it helpful?

>50% improved target visualization



Other:

- Did not use
- Was not helpful



Discussion

- Ultrasound contrast agent, Lumason, underutilized for U/S guided interventional procedures
- Unfamiliarity is the major reason for not using Lumason
- Educational training program increased utilization of Lumason
- Patient care improved by increasing biopsy success rate and reducing diagnostic delays and cost

