Computed Tomography-guided Localization of Pulmonary Nodules in VATS

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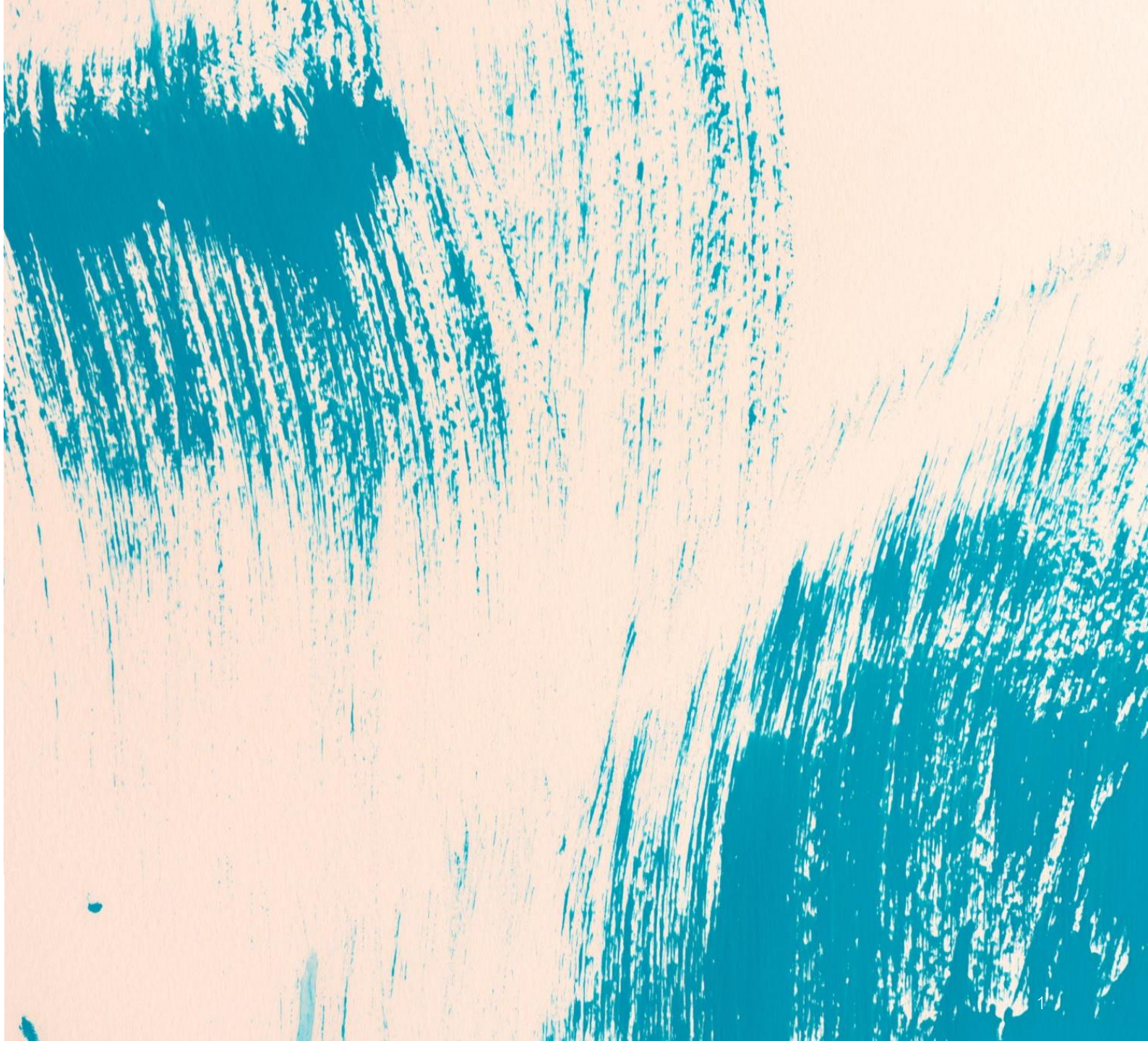
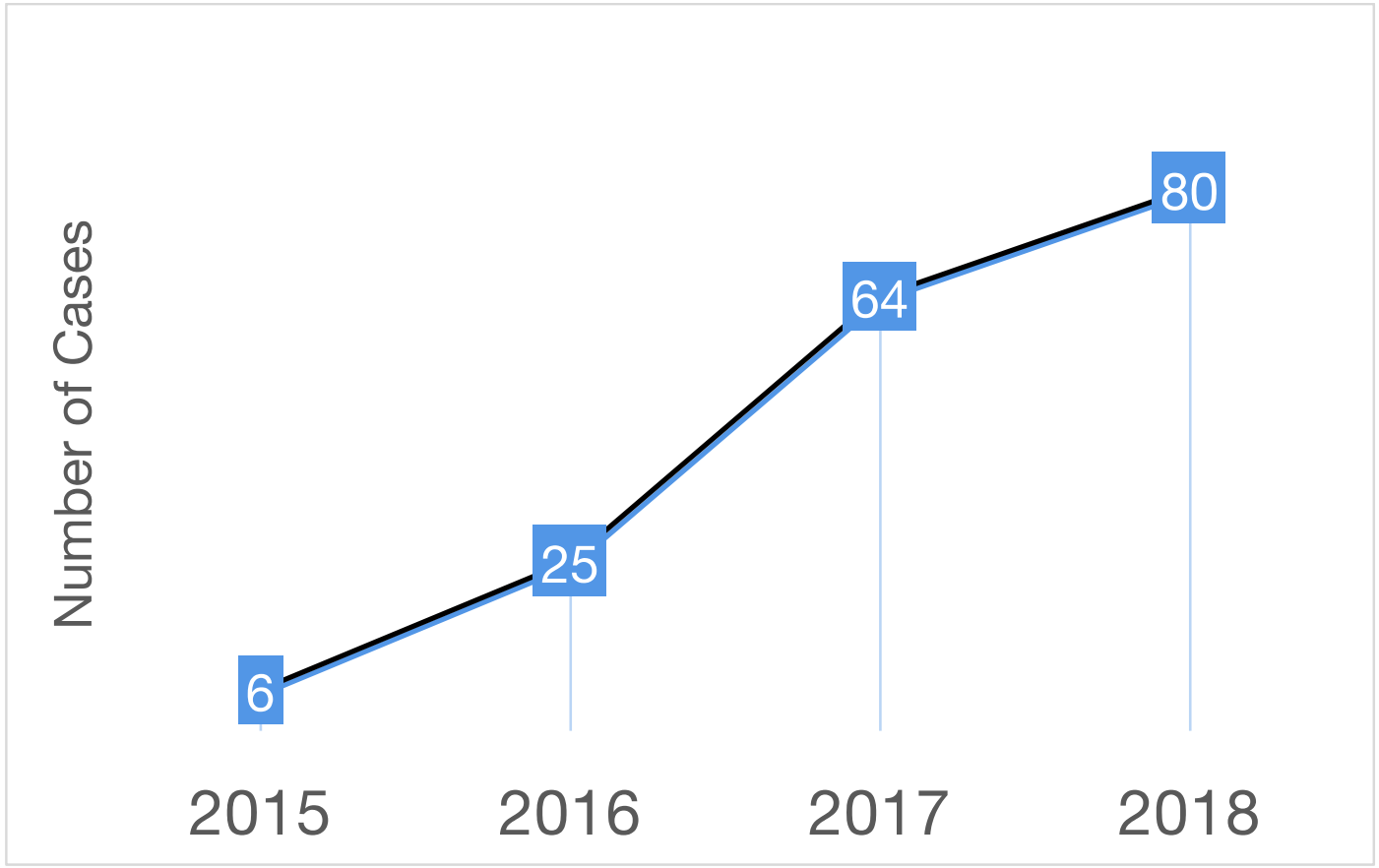


INTRODUCTION

- Low-dose lung CT has been widely used in lung cancer screening, especially in small lung nodules.
- There are challenges in recognizing small, subsolid, or deeply-seated pulmonary nodules intraoperatively by palpation or visualization during VATS.
- Several CT-guided percutaneous needle localization methods have been used, such as dye injection and hookwire or microcoil implantation.

PATENT BLUE STAINING AT CGH

- Dye localization was performed under a CT with slice thickness of 2.5-5mm before surgery.
- The patients were transferred to the operating room or ward for VATS .

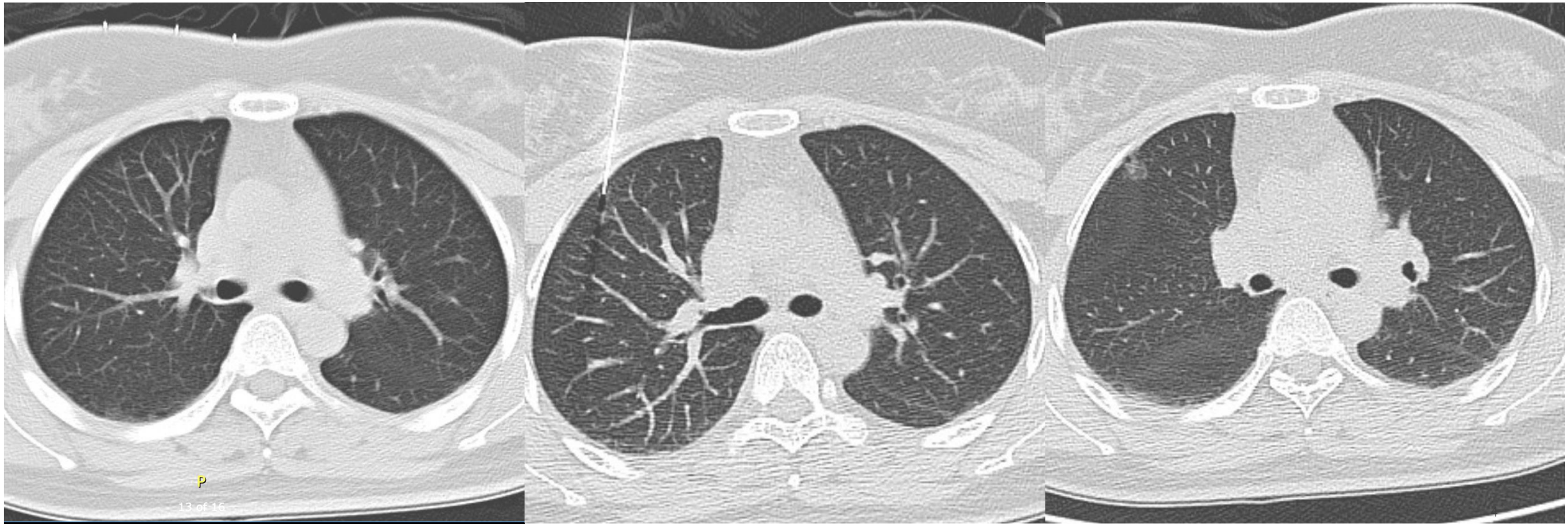


CT-guided needle localization

Patent Blue dye injection

(0.3ml)

Post-localization CT



MATERIALS AND METHODS

- A retrospective review of needle localization cases between January 1, 2018, and December 31, 2018, at CGH was performed

- 80 patients, 106 nodules

PATIENT CHARACTERISTICS

GENDER

21 males
and
59 females

MEAN AGE

58.4±11

Years old

CANCER HISTORY

22 (27.2%)

10 (12.3%)

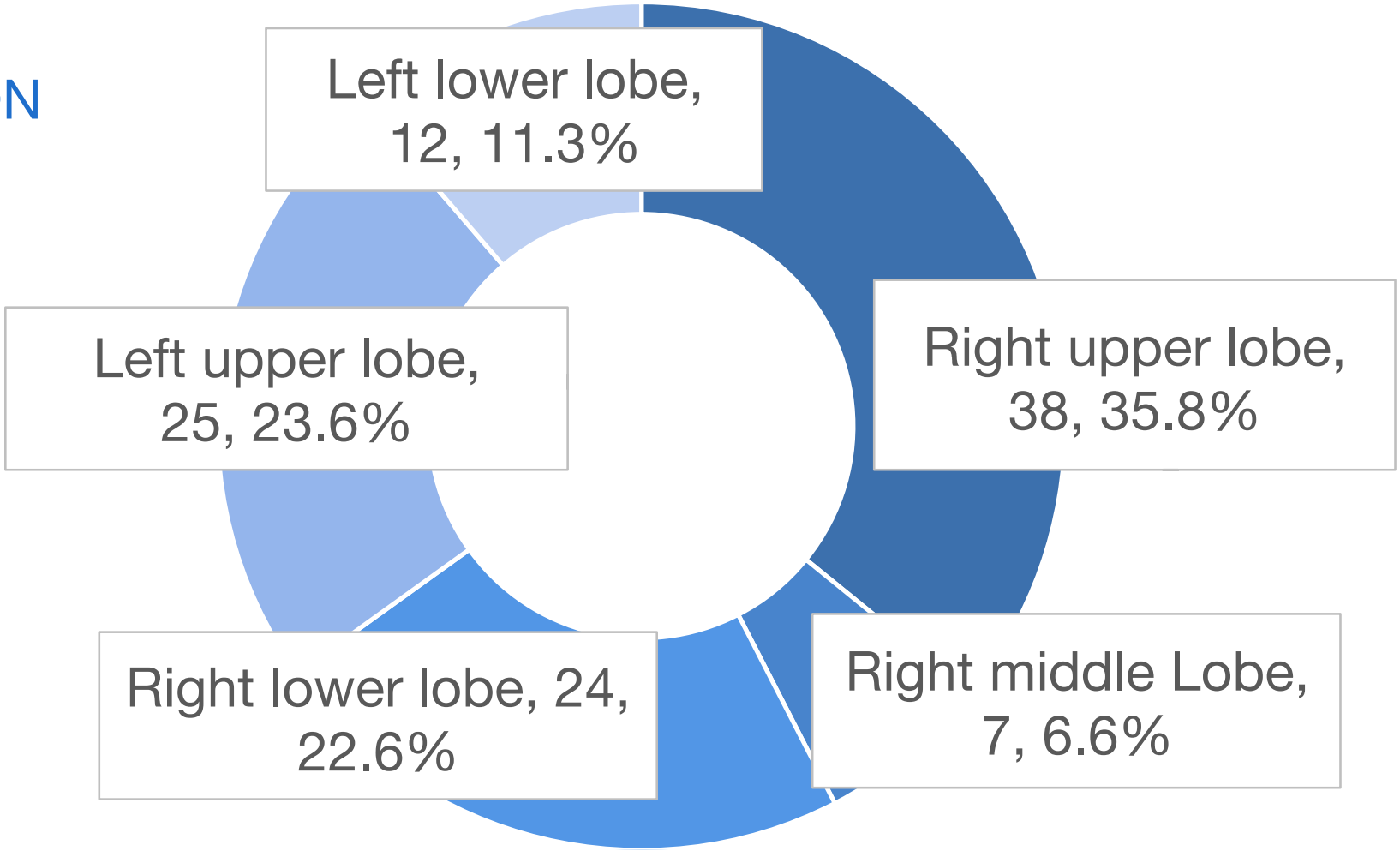
Smoking (Current)

9 (11.1%)

Smoking (Quitted)

LOCALIZATION CHARACTERISTICS

LOCATION



LOCALIZATION CHARACTERISTICS

MEAN SIZE

0.68±0.32

cm

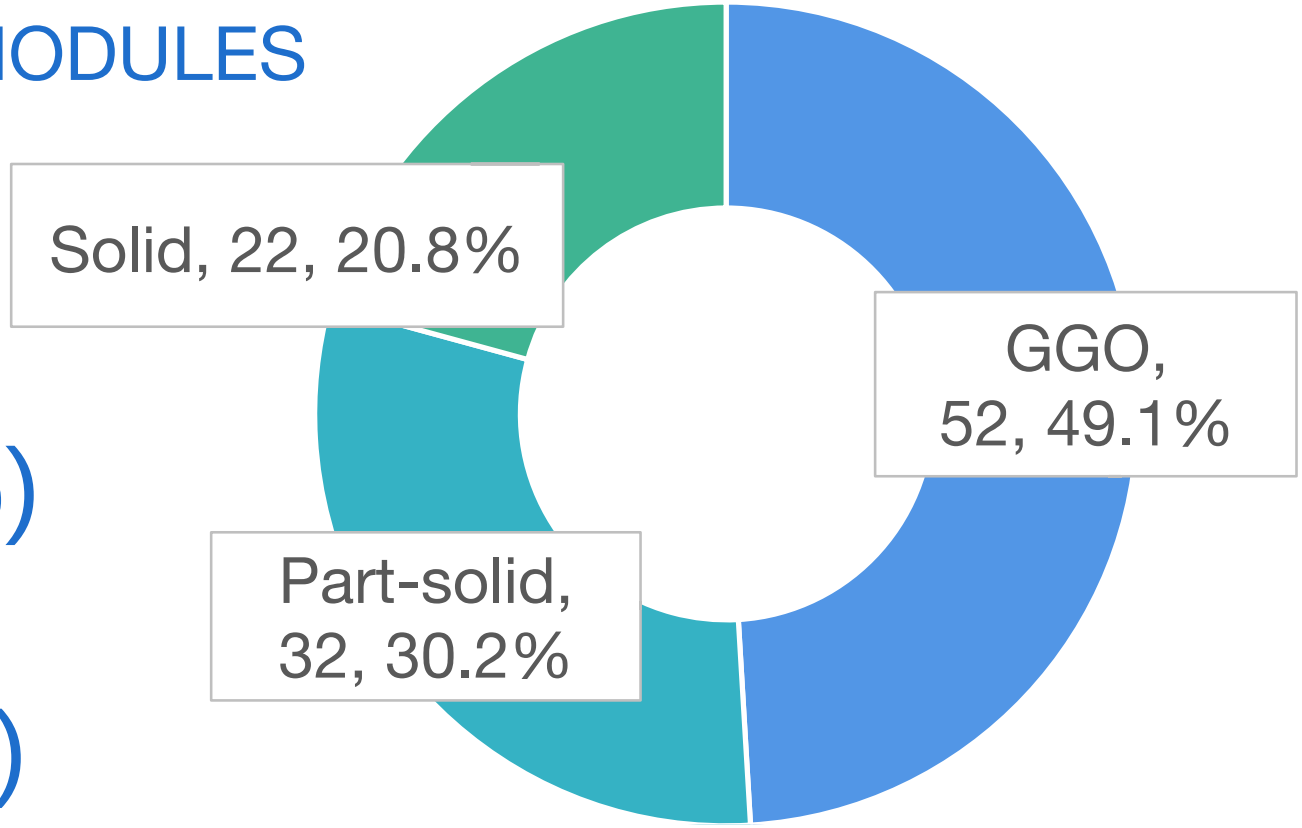
44 (41.5%)

<0.6cm

62 (58.5%)

≥0.6cm

NODULES



LOCALIZATION CHARACTERISTICS

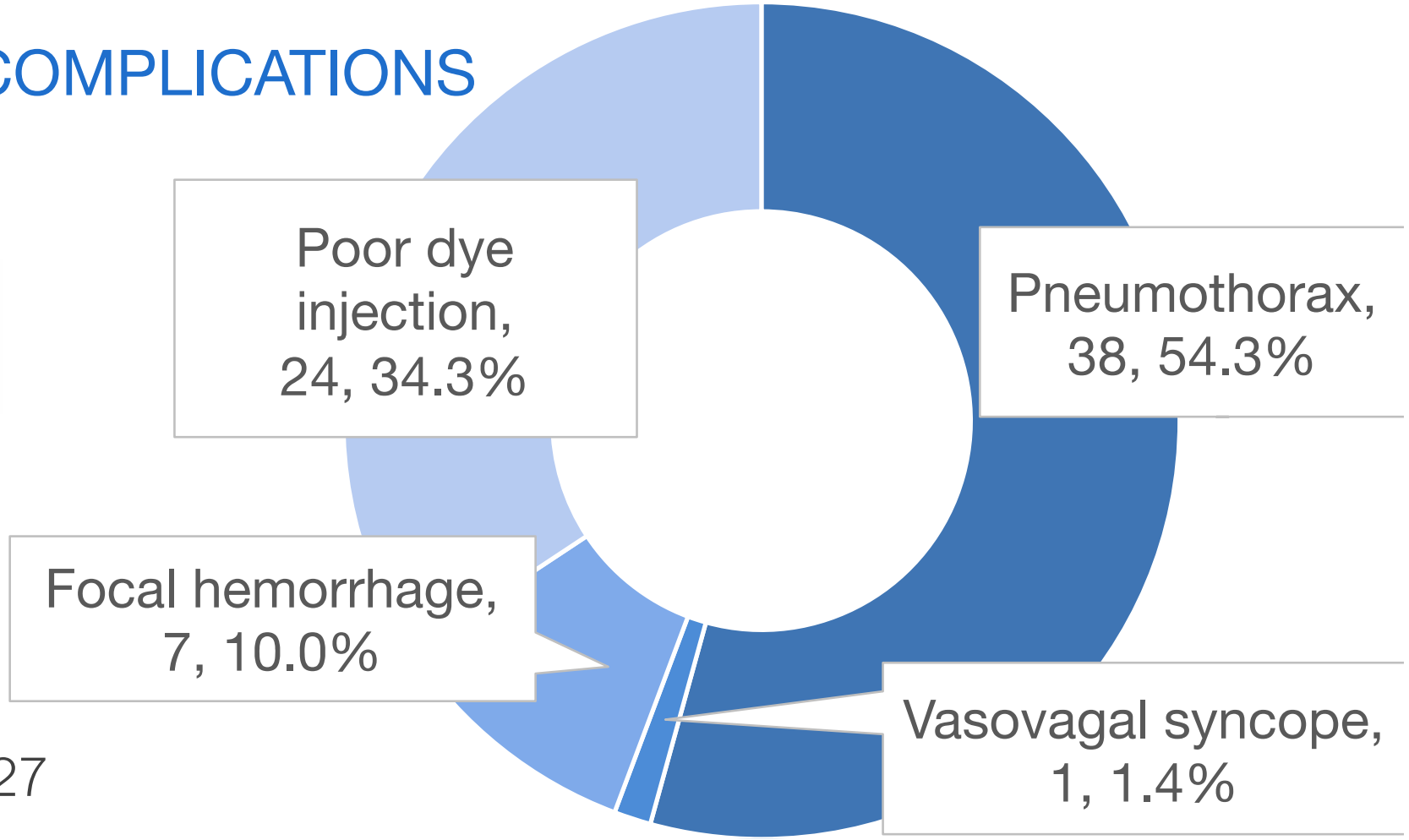
DURATION

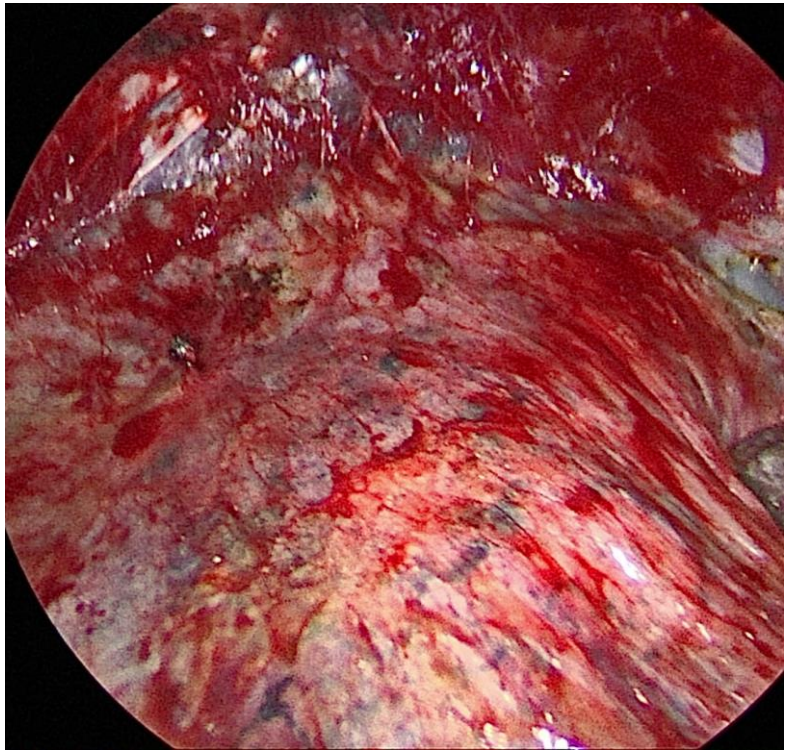
38.49±14.89
min

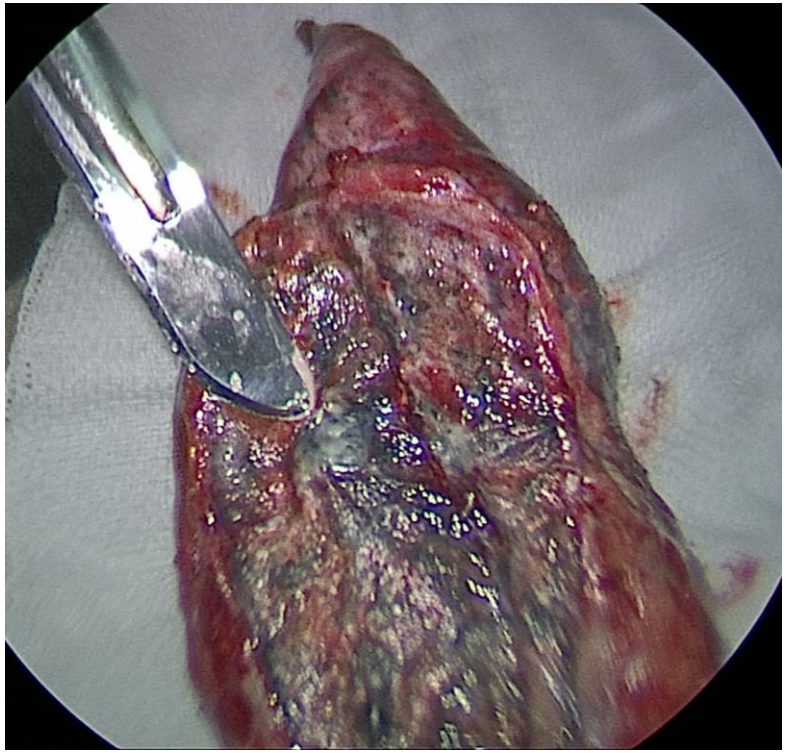
Single nodule: 34.39±13.18

Multiple nodules: 48.04±14.27

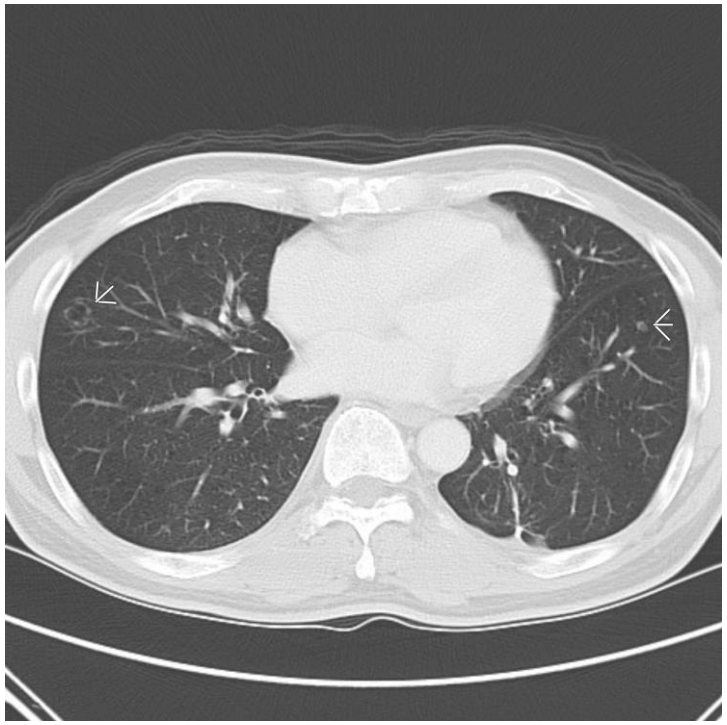
COMPLICATIONS

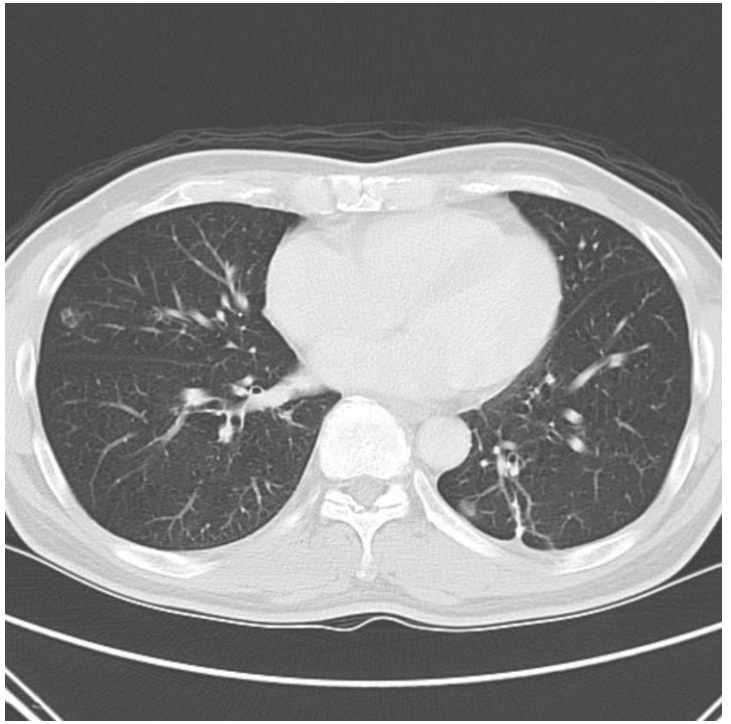


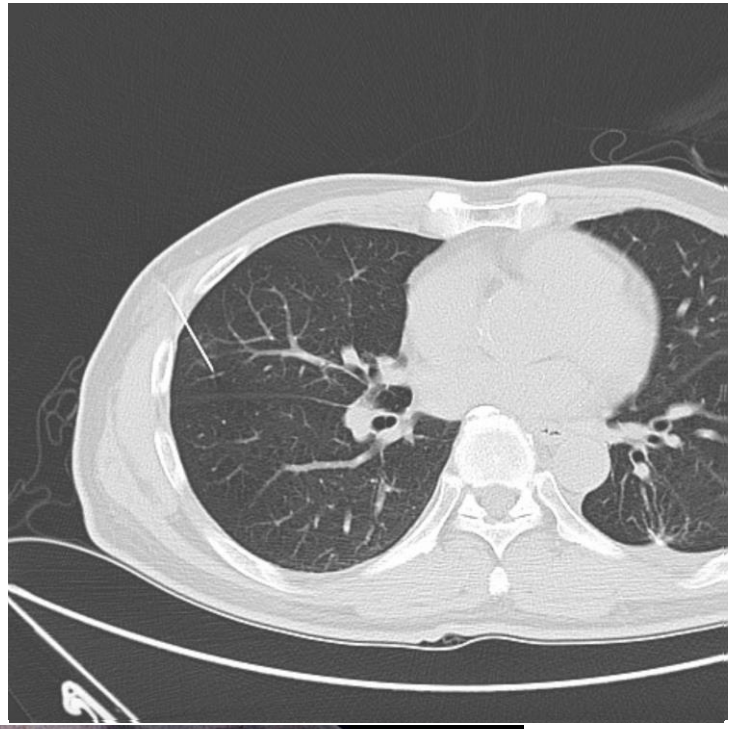




POOR DYE INJECTION…

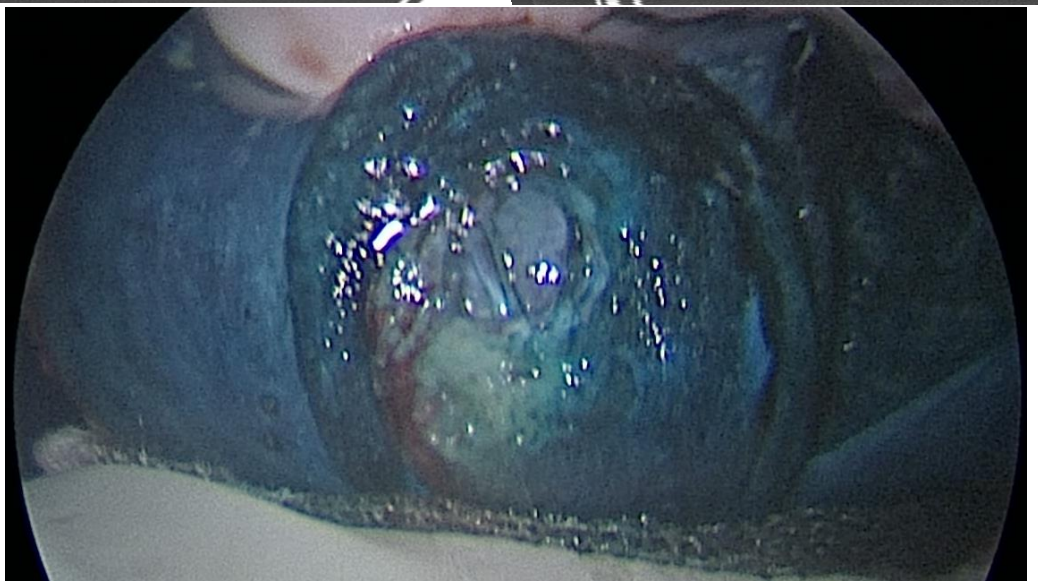




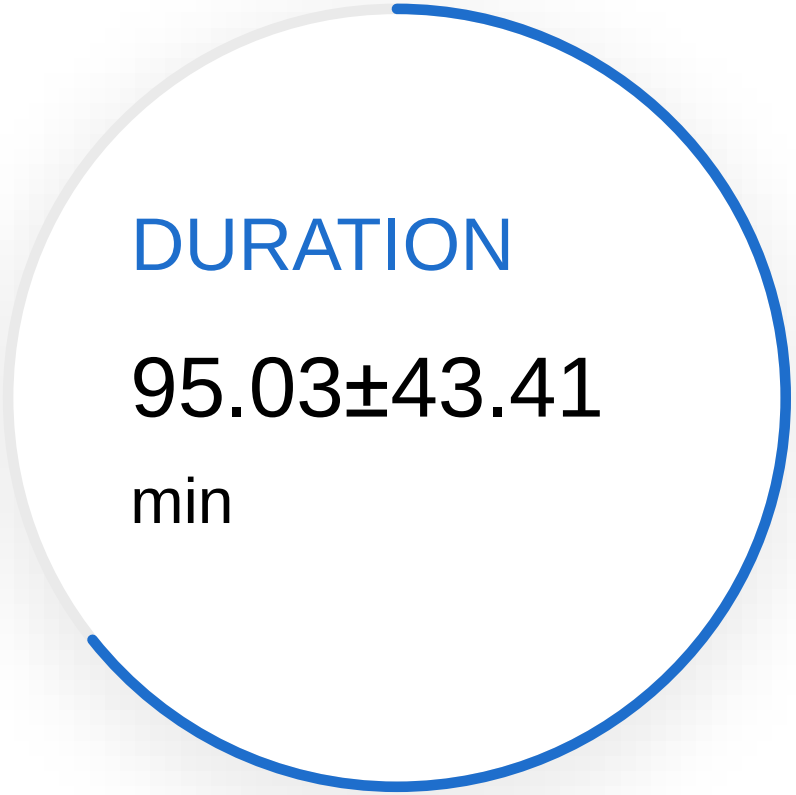


69 y/o male

Bilateral lung adenocarcinoma s/p chemotherapy and wedge resection



SURGERY AND PATHOLOGY



46 (43.4%)

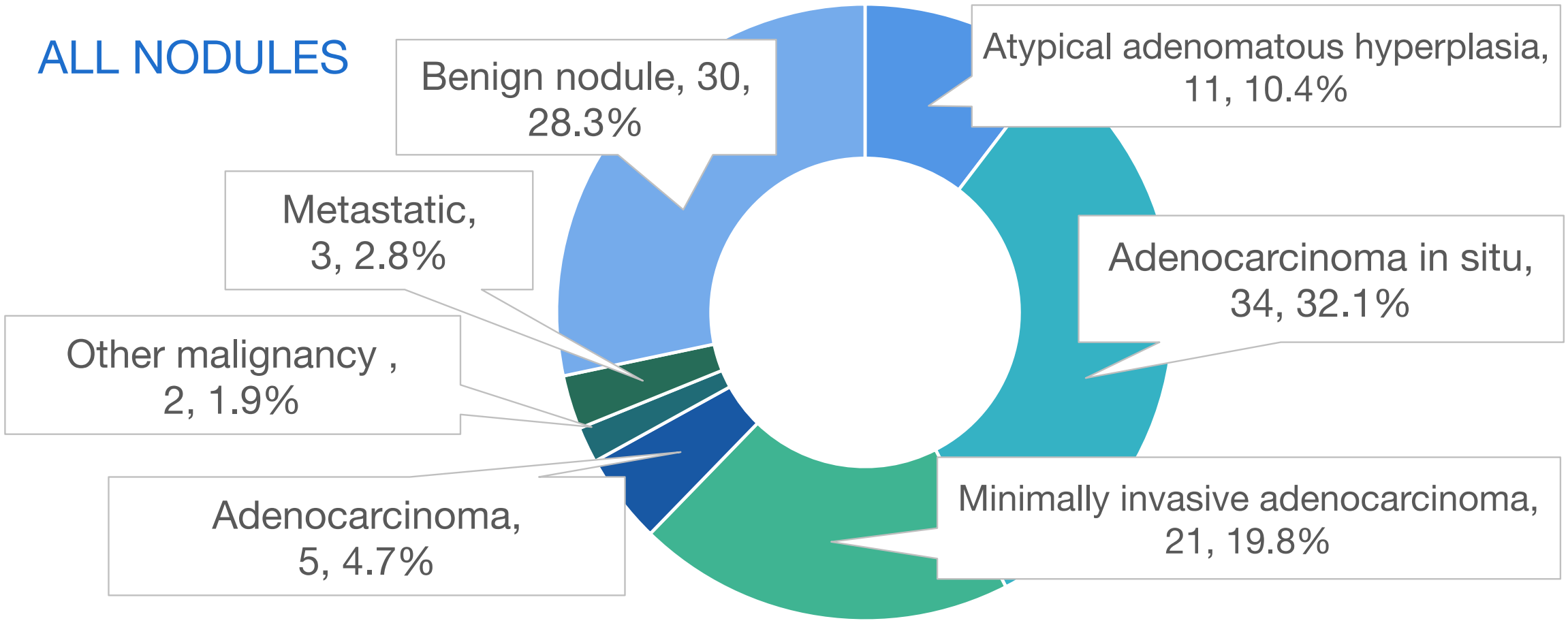
Segmentectomy

60 (56.6%)

Wedge resection

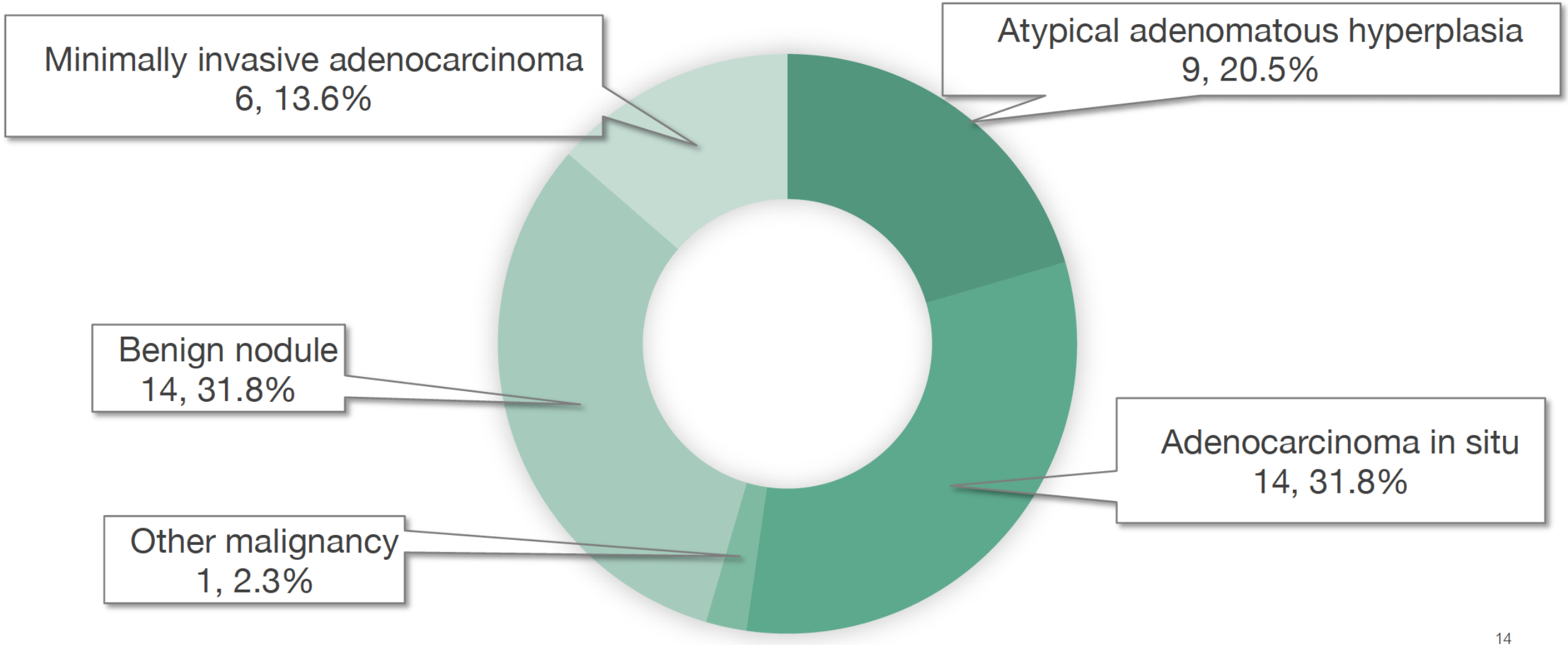
SURGERY AND PATHOLOGY

ALL NODULES



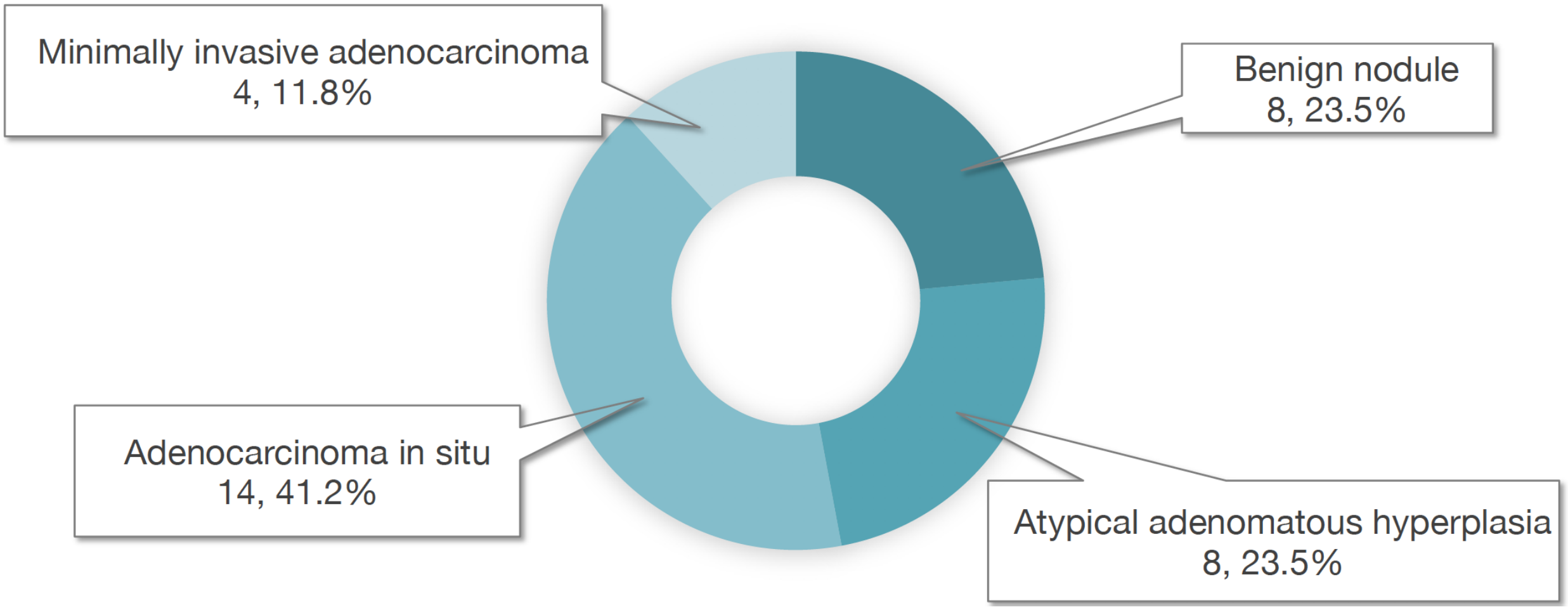
SURGERY AND PATHOLOGY

Nodules <0.6cm



SURGERY AND PATHOLOGY

GGO/Part-solid nodules <0.6cm



SURGICAL OUTCOMES

	Total
Post-OP length of stays (days)	4.6±3.13 (1-24)
Type of drainage	
Pigtail	66 (82.5%)
Chest tube	12 (15%)
None	3 (3.8%)
Duration of chest drainage (days)	3.05±2.19 (1-11)
Complication	
Prolonged air leak*	11 (13.8%)
Readmission	0
Mortality	0

CONCLUSION

- CT-guided dye localization is still a safe and efficient method performed by well-experienced radiologists.
- The incidence of AIS, MIA is up to one half in GGO and part-solid nodules with size less than 0.6cm.
- Follow up and management protocols should be revised with great concern.

THANK YOU FOR LISTENING