



Introduction

Incidental thyroid nodules (ITNs) are increasingly detected during imaging performed for head and neck cancer (HNC) workup and surveillance. Despite the availability of well-defined guidelines from the ACR (American College of Radiology) and the ATA (American Thyroid Association), the evaluation of these nodules is inconsistent.

Objectives: To characterize the prevalence of ITNs in HNC patients, assess adherence to ACR/ATA guidelines, and identify factors associated with evaluation in this high-risk population.

Methods

This retrospective study reviewed 390 HNC patients discussed at a multidisciplinary tumor board (July 2023–May 2024). Data collected included demographics, primary HNC type and staging, imaging modality, ITN characteristics, PET avidity, biopsy/pathology, and outcomes.

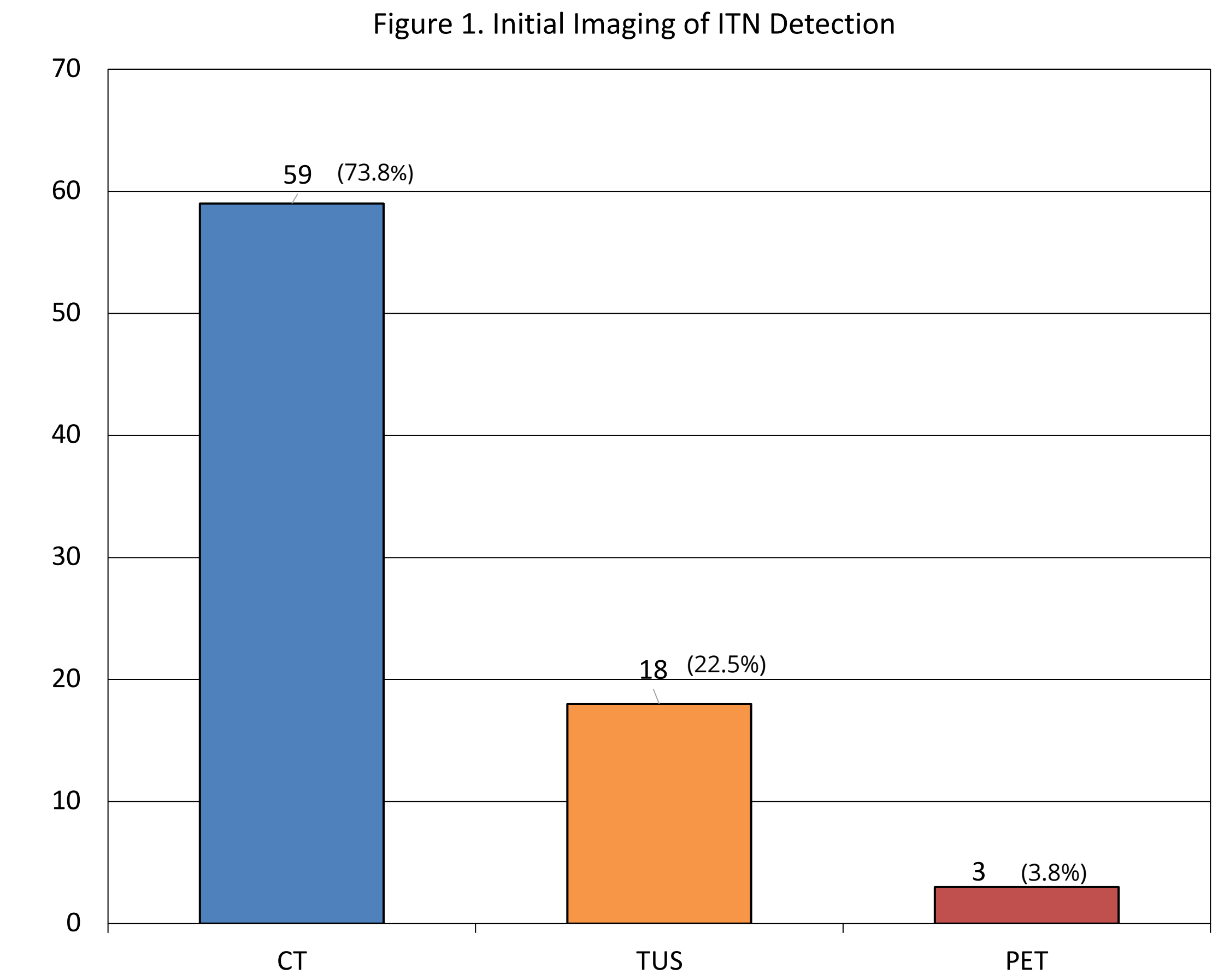
- Design: Retrospective chart review
- Population: 390 HNC patients
- Data points: Demographics, HNC characteristics, imaging modality, ITN size/location, FDG-PET avidity, biopsy/pathology
- Statistical analysis: Chi-square or Fisher’s Exact test; p < 0.05 considered significant

Results

Incidence & Demographics

ITNs were identified in nearly one in five patients. A small subset had multiple nodules, and incidence rates remained stable over time. Older age showed a trend toward increased prevalence.

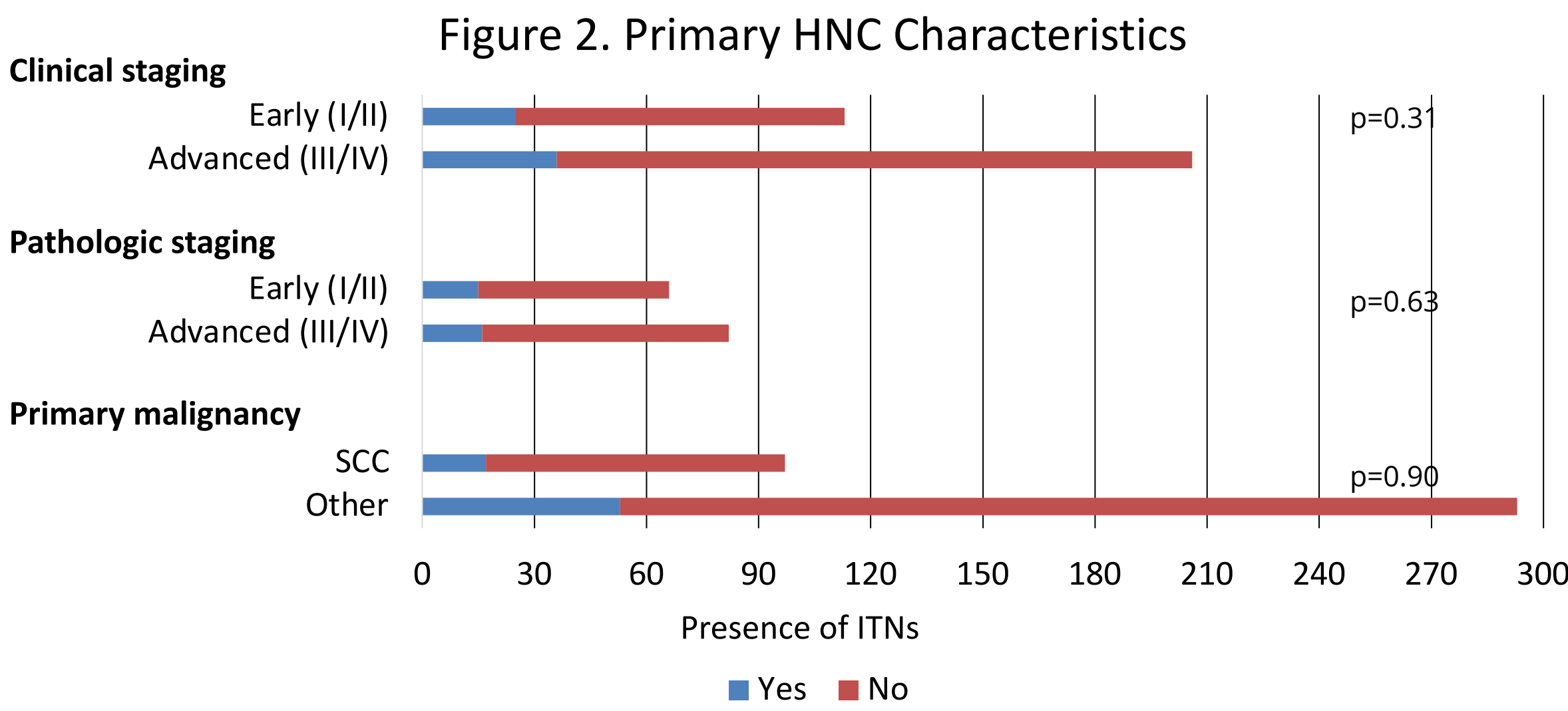
- 18.1% (n=70) had ≥1 ITN
- 5.6% (n=22) had 2 nodules; 2.6% (n=10) had ≥3
- Incidence rate: **0.030 cases/person/year** (2018–2024)
- Patients >65 years: 61.4% had ITNs (p=0.11, NS)



Primary HNC Characteristics

The distribution of histology and stage did not differ between patients with and without ITNs. Squamous cell carcinoma (SCC) was the most common malignancy in both groups.

- SCC in ITN patients: 24.3%
- SCC in non-ITN patients: 25.0% (p=0.90)
- See Figure 2 for primary HNC correlation.



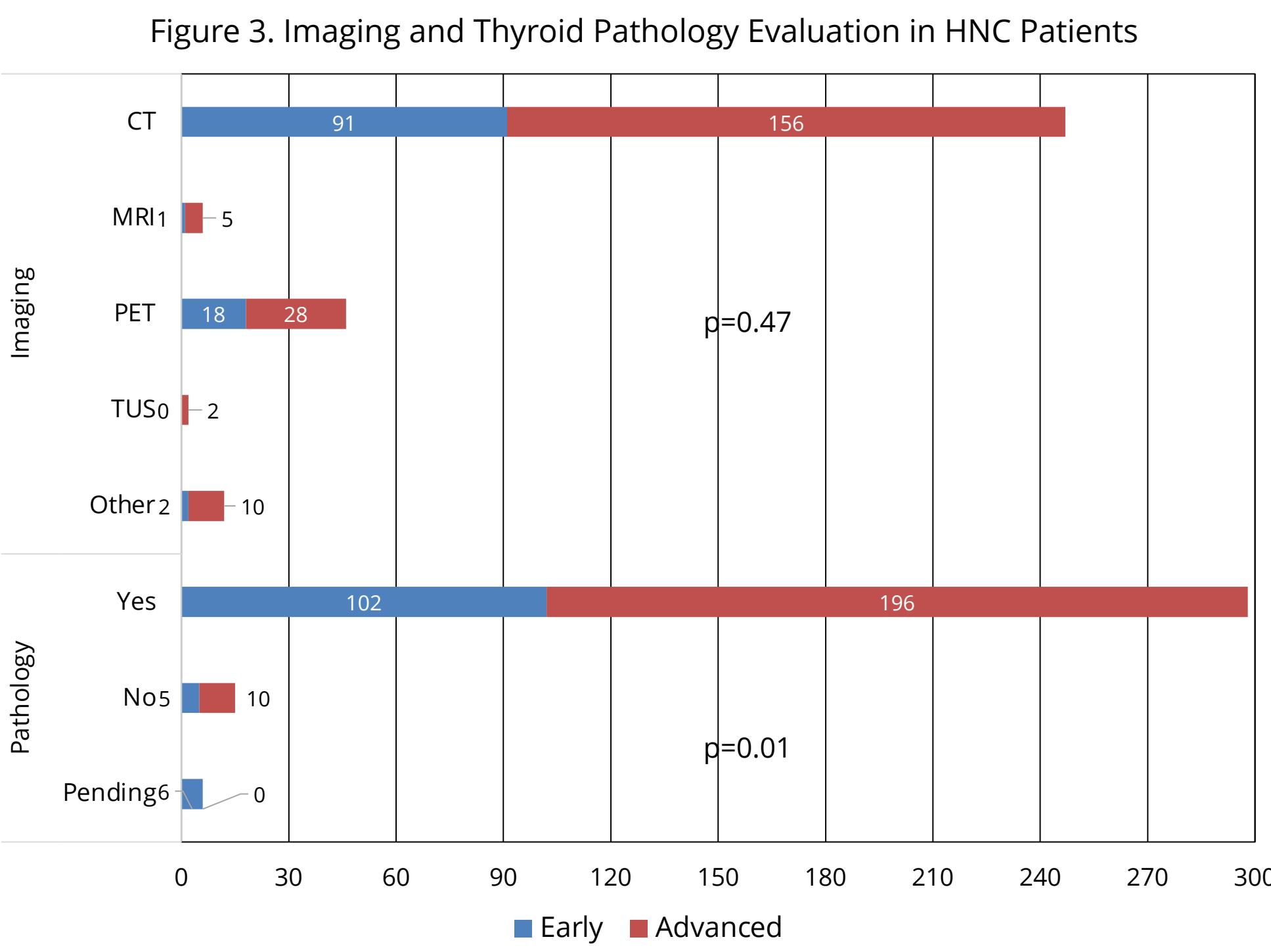
Detection Modality

Most ITNs were first identified on CT, with far fewer detected by ultrasound or PET (Figure 1).

FDG-PET Avid ITNs

PET-avid nodules represented an especially high-risk group, yet none underwent ultrasound. Only a minority received further diagnostic workup, and malignancy was found in a clinically meaningful proportion.

- 13 patients (18.6%) had PET-avid ITNs (17 nodules)
- 0% received TUS
- 35.3% underwent FNA/biopsy
- 2 (11.8%) were malignant; 1 thyroidectomy performed



Ultrasound Use & Guideline Compliance

Ultrasound was underutilized, and compliance with both ACR and ATA guidelines was poor. Early-stage patients were more likely to undergo thyroid pathology evaluation, though this did not translate to greater ultrasound use.

Only 18/70 (25.7%) ITNs received initial TUS
Only 1 patient (1.6%) had interval TUS follow-up

- **ACR compliance:** 21.2% (p=0.18)
- **ATA compliance:** 22.5% (p=0.28)
- **Early-stage HNC:**
 - More likely to undergo thyroid pathologic evaluation (p=0.01)
 - Not more likely to receive TUS (p=0.47)

Conclusions

Incidental thyroid nodules (ITNs) are prevalent in patients with head and neck cancer, yet guideline-adherence remains poor. Even among PET-avid nodules, which represent a higher-risk group, thyroid ultrasound was not performed in any case. Overall, adherence to ACR and ATA recommendations was consistently low, highlighting a significant gap between established guidelines and real-world practice. Importantly, malignancy was identified in a small but clinically meaningful proportion of nodules, underscoring the importance of proper evaluation. Incorporating ACR and ATA guidelines into multidisciplinary tumor board discussions and potentially into NCCN recommendations may improve standardization of care and ultimately lead to better outcomes for this patient population..

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