

# Utility of Parathyroid Autofluorescence in Differentiating Parathyroid Pathology

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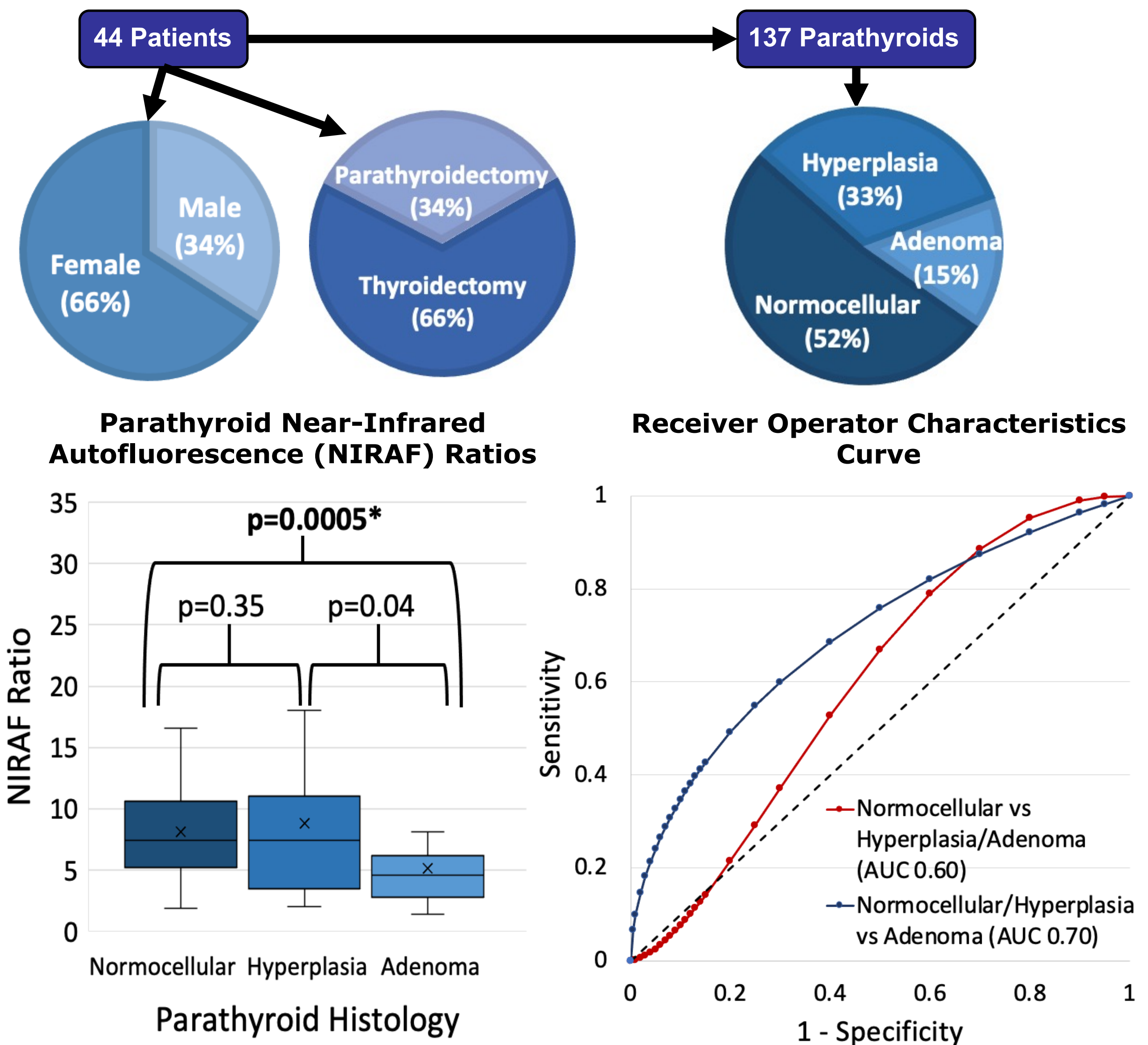
## Introduction

Near-infrared autofluorescence (NIRAF) is an emerging adjunct for intraoperative parathyroid identification. However, its ability to differentiate between normocellular, hyperplastic, or adenomatous parathyroids remains unexplored.

## Methods

In vivo NIRAF ratios (NIFRs) for each identified parathyroid were recorded for patients undergoing thyroidectomy or parathyroidectomy at a single institution from Aug to Dec 2023. Parathyroids were categorized as normocellular by visual inspection and hyperplastic or adenomatous by final histology. Given that multiple comparisons were made, a Bonferroni adjustment was performed, and statistical significance was set at  $p < 0.017$ .

## Results



## Discussion/Conclusion

Adenomas have lower NIFRs than normocellular parathyroids. This is potentially due to calcium-sensing receptor (CaSR) downregulation in adenomas, but further studies are needed to confirm CaSR as the fluorophore. The differences in NIFRs are unlikely to be sufficient to distinguish between various parathyroid pathologies. NIRAF is most useful in detecting normocellular parathyroids.