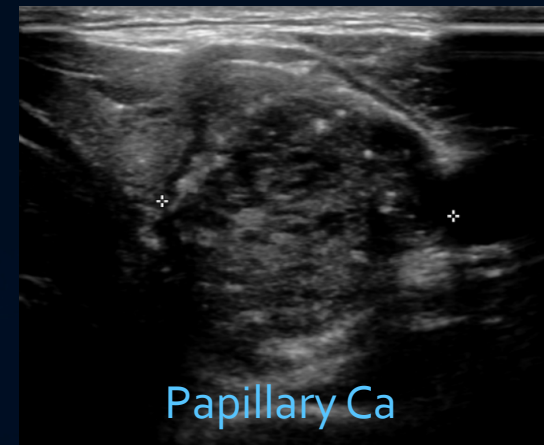
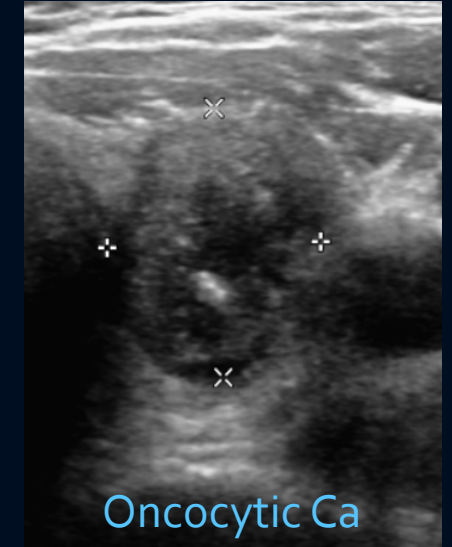
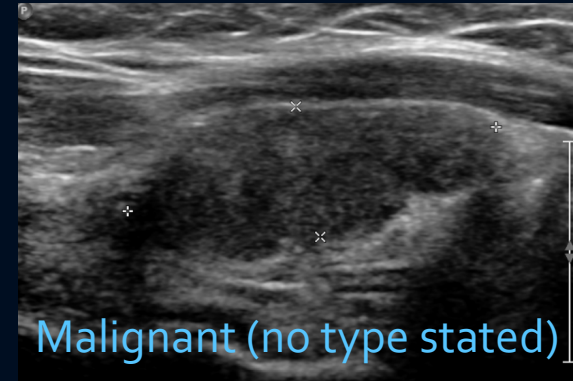


REDUCING UNNECESSARY THYROID FNAs - ACR TI-RADS

C HAYES GRADDIPMEDUS SOVEREIGN RADIOLOGY, HIGH ST XRAY
DR S USSHER MBCHB FRANZCR KEYSTONE RADIOLOGY, BALLARAT HEALTH SERVICES
T NGUYEN GRADDIPMEDUS BALLARAT HEALTH SERVICES
R SEWGOLAM GRADDIPMEDUS SOVEREIGN RADIOLOGY

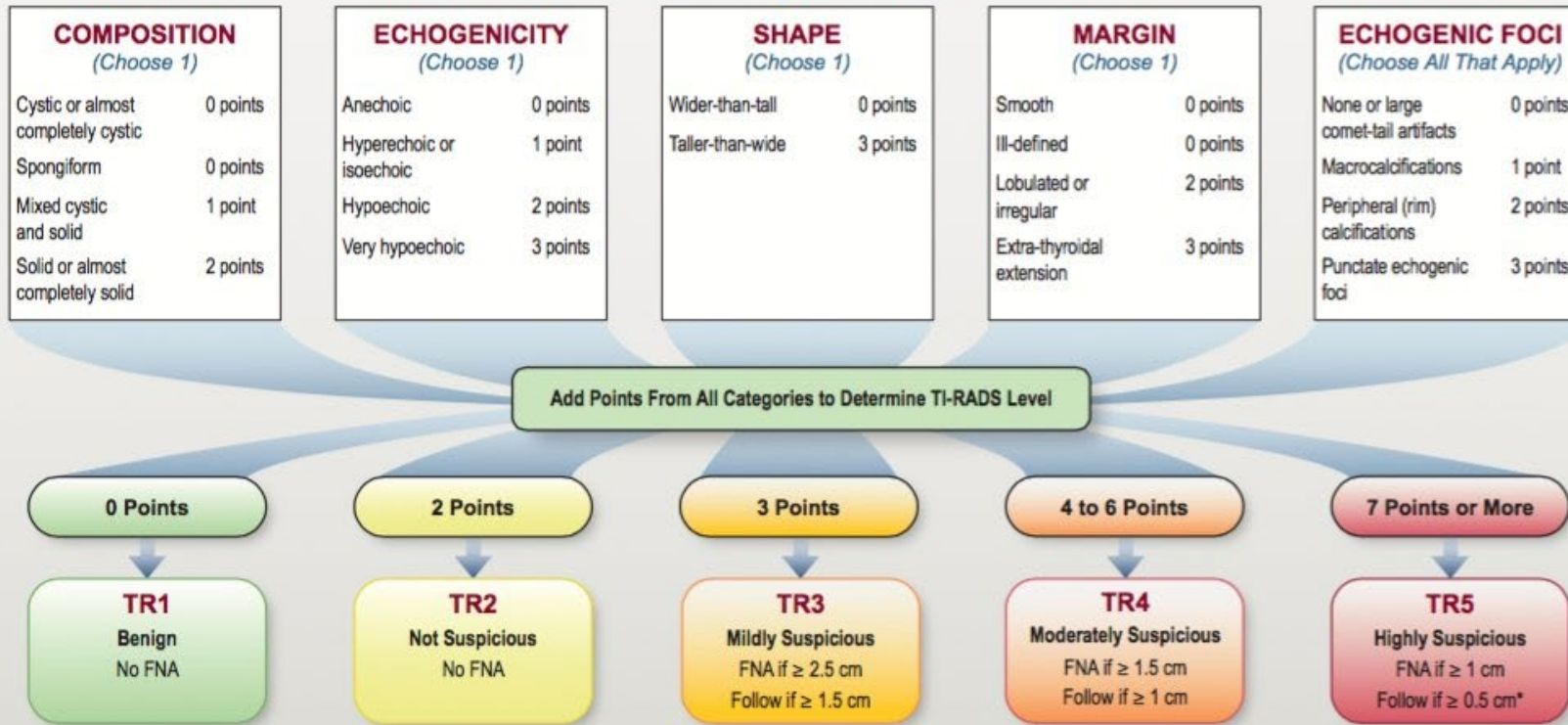
INTRODUCTION

- Thyroid FNAs :
 - Traditionally low yield invasive procedure
 - Create significant financial and human costs (stress, anxiety)
- 2017 ACR TI-RADS White Paper :
 - Reduces FNAs (21-35% reduction compared to other TI-RADS models)
 - Ensures clinically significant malignancies are biopsied
 - Equal sensitivity to other TI-RADS models
- Before adopting ACR TI-RADS we decided to test its potential performance with a 5 year retrospective audit of one affiliated centre's FNA results



Malignant lesions from audit

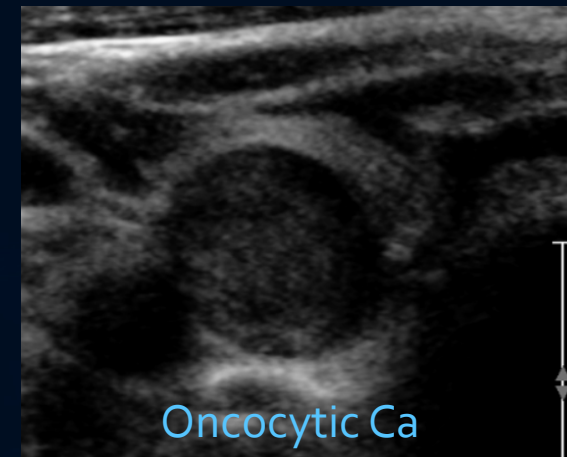
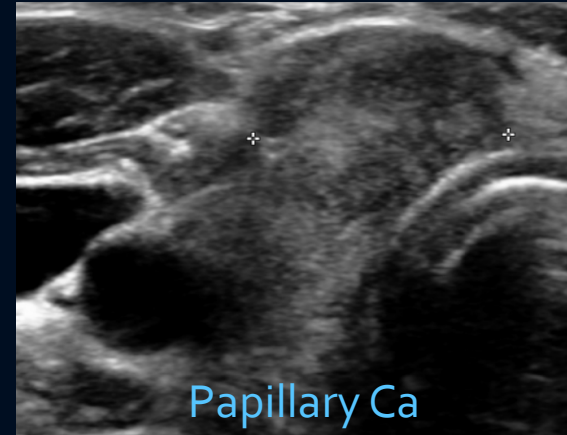
ACR TI-RADS



COMPOSITION	ECHOGENICITY	SHAPE	MARGIN	ECHOGENIC FOCI
<p><i>Spongiform</i>: Composed predominantly (>50%) of small cystic spaces. Do not add further points for other categories.</p> <p><i>Mixed cystic and solid</i>: Assign points for predominant solid component.</p> <p>Assign 2 points if composition cannot be determined because of calcification.</p>	<p><i>Anechoic</i>: Applies to cystic or almost completely cystic nodules.</p> <p><i>Hyperechoic/isoechoic/hypoechoic</i>: Compared to adjacent parenchyma.</p> <p><i>Very hypoechoic</i>: More hypoechoic than strap muscles.</p> <p>Assign 1 point if echogenicity cannot be determined.</p>	<p><i>Taller-than-wide</i>: Should be assessed on a transverse image with measurements parallel to sound beam for height and perpendicular to sound beam for width.</p> <p>This can usually be assessed by visual inspection.</p>	<p><i>Lobulated</i>: Protrusions into adjacent tissue.</p> <p><i>Irregular</i>: Jagged, spiculated, or sharp angles.</p> <p><i>Extrathyroidal extension</i>: Obvious invasion = malignancy.</p> <p>Assign 0 points if margin cannot be determined.</p>	<p><i>Large comet-tail artifacts</i>: V-shaped, >1 mm, in cystic components.</p> <p><i>Macrocalcifications</i>: Cause acoustic shadowing.</p> <p><i>Peripheral</i>: Complete or incomplete along margin.</p> <p><i>Punctate echogenic foci</i>: May have small comet-tail artifacts.</p>

AUDIT METHOD

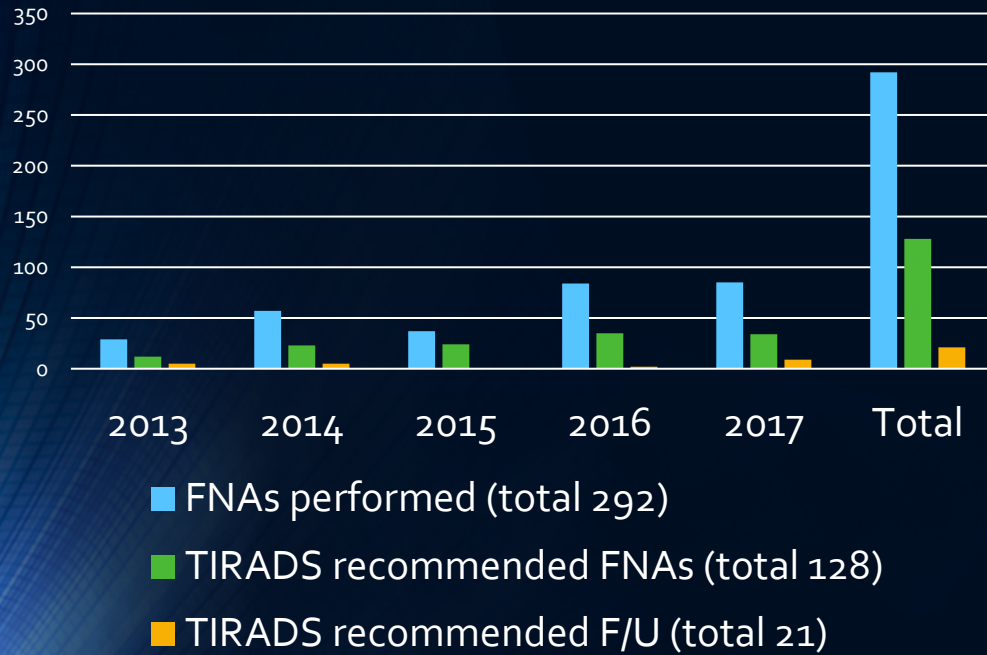
- Retrospective audit performed 2017
 - Large regional public hospital
 - 292 thyroid FNAs audited from 2013 to 2017
 - Previous FNA criteria included size >1cm plus one or more suspicious features
- Thyroid nodules graded using ACRTI-RADS
 - Each nodule consensus graded by Consultant Radiologist and 3 experienced sonographers (if no majority consensus Radiologist prevailed)
- Pathology results obtained
 - Collated into Benign / Malignant / Inconclusive



Malignant lesions from audit

RESULTS

FNA AUDIT



PATHOLOGY AUDIT

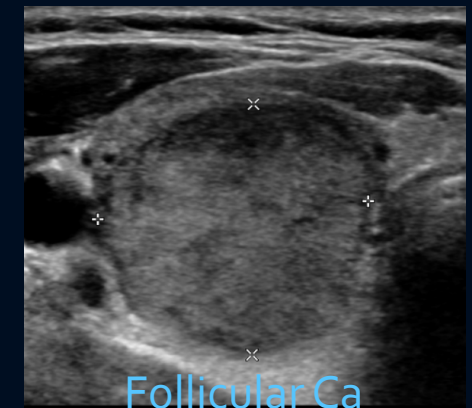
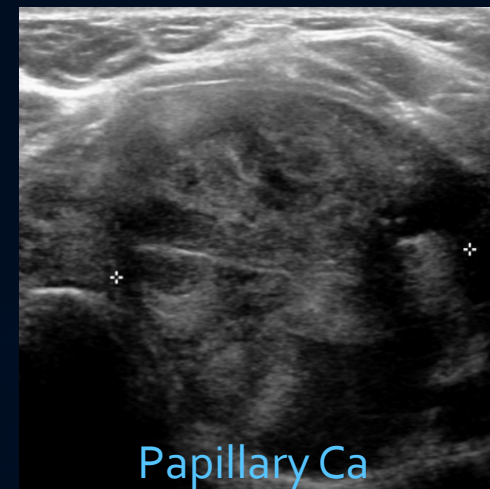
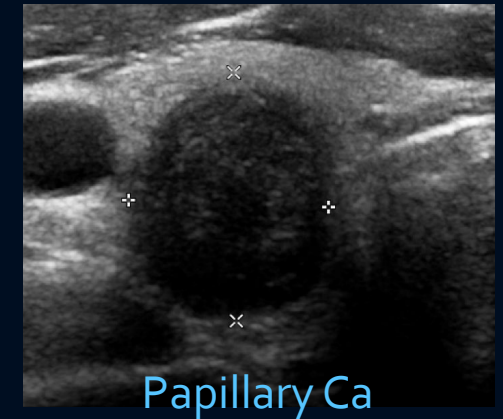
Total Results	Total Benign	Total Malignant	Total Inconclusive
292	205	14	73

MALIGNANCIES / NO. OF FNAs (excludes inconclusive)

T1-2 Malignancies	T3 Malignancies	T4 Malignancies	T5 Malignancies
0/94	1/47	3/55	10/23

CONCLUSION

- 164 total unnecessary FNAs were performed over 5 years (56%)
- No malignancies would have been missed using ACR TI-RADS
- We strongly advocate using ACR TI-RADS for planning intervention and management of thyroid nodules
 - Significant improvement on outdated criteria
 - Equal sensitivity to other TI-RADS models
 - Higher reduction in FNAs than other TI-RADS models (21-35%)



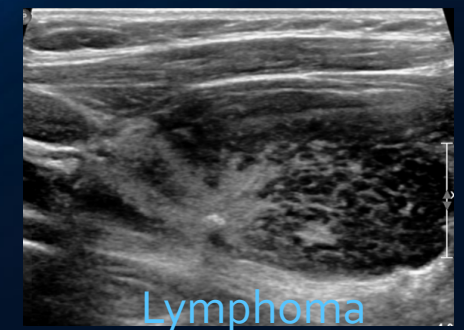
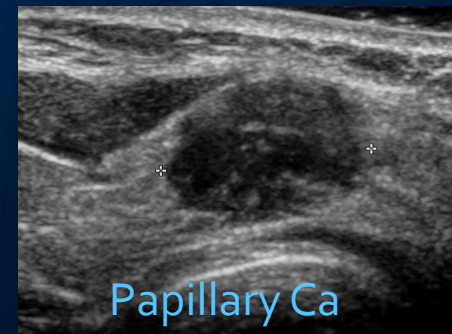
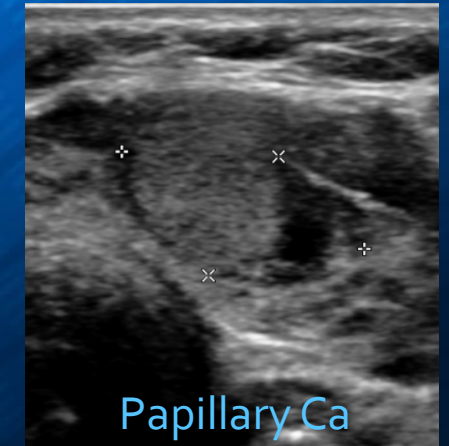
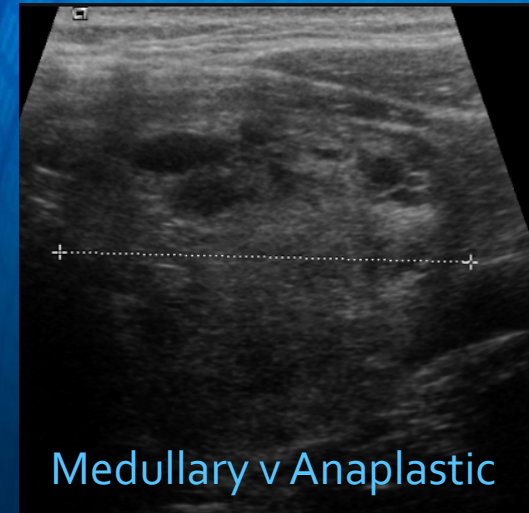
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DECLARATIONS OF INTEREST : None

CONTACT : Chris Hayes - chayes@sovereignradiology.com.au



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