

Implementing the BAETS Guidelines of Thyroid USS reporting

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Introduction

- British Thyroid Association Guidelines for the Management of Thyroid Cancer
 - CLINICAL ENDOCRINOLOGY VOLUME 81 SUPPLEMENT 1 JULY 2014
- Chapter 4 = **Ultrasound Assessment of Thyroid Nodules**
 - Key Recommendations:**
 - 1) The U1-U5 grading system is used
 - 2) Benign USS appearances (U1, U2) are regarded as reassuring, and not requiring FNA unless high risk of malignancy
 - 3) If the US appearances are equivocal, indeterminate or suspicious (i.e. U3 - U5) an US guided FNAC should follow
 - 4) Nodules with Thy 2 cytology but indeterminate or suspicious US should undergo repeat FNAC

Introduction

- AIM:**
 - 1) Do Raigmore thyroid USS reports meet the guidelines?
 - 2) Can this be improved?

At the authors' unit, it was recognised that reports of thyroid USS varied in detail and content. It was felt this did not facilitate clinical decision making or allow maximal confidence in advising patients on how to proceed. It also led to repeat requests for scans to achieve further information, as reviewing images of USS with a radiologist was not as conducive to reporter review as real-time scanning and immediate reporting. This was an additional strain on already limited resources. In view of this, a potential clinical improvement project was identified, and a plan formulated as per the PDSA (Plan, Do, Study, Act) model¹

Method

The first part of the plan was to identify if the BTA guidelines were being met. The results were studied and analysed. The prediction was that only 50% of reports would meet the published guidelines; this prediction was based on the anecdotal experience of the surgeons when trying to make clinical decisions based on thyroid sonography, and the radiologists' anecdotal experience of having to vet and/or perform repeat USS requests. The departments then worked together to summarise what was learnt, and to identify if and how compliance with the guidelines may be improved.

Loop 1:

July 2015– October 2015
65 scans in total
One excluded because not thyroid scan
- Intervention -

Loop 2:

August 2016 – October 2016
50 scans in total
1 excluded as Paediatric scan, 2 excluded as for Thyroiditis

This therefore led to the key intervention agreed between both departments. It was recognised that a tighter cohort of reporting radiologists would consolidate and improve the expertise of the reporting radiologist(s) and potentially reduce inconsistencies.

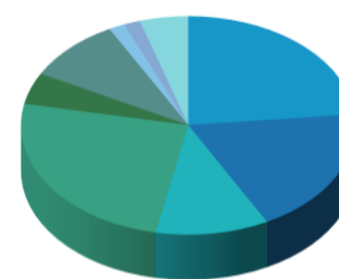
Results

Results Comparison:

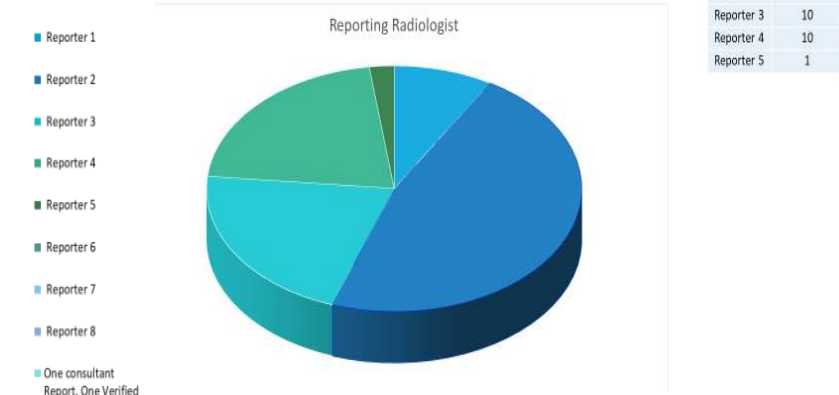
Key Recommendation	Loop 2: Yes	Loop 1: Yes
1 (The U1-U5 scoring system is used)	55.1%	18.7%
2 (Benign USS appearances (U1, U2) are regarded as reassuring, and not requiring FNA unless high risk of malignancy)	100%	50%
3 (If the US appearances are equivocal, indeterminate or suspicious (i.e. U3 - U5) an US guided FNAC should follow)	76.5%	57.1%
4 (Nodules with Thy 2 cytology but indeterminate or suspicious US should undergo repeat FNAC)	0%	33.3%

A key discussion point after studying the analysed data was the number of reporters for the initial 64 reports. As the quality and confidence of an USS assessment (and therefore the subsequent report) is reporter dependent, the dilution of the ultrasound service amongst a large number of radiologists was felt to be significant. This was universally agreed between the radiologists and the surgeons. This is borne out by the literature; for example, Choi et al showed in 2010 that when comparing reporting, four experienced radiologists showed 'slight agreement' when comparing echogenicity, 'fair agreement' when comparing margin, calcification, and final assessment, and 'substantial agreement' when commenting on shape and vascularity. In another paper, Park et al showed that the use of guidelines improved inter-observer and intra-observer agreement for commenting on Thyroid nodules.

Reporters (N = 64) (1st loop)



Reporters (N = 47) (2nd loop)



Discussion

This PDSA structured clinical improvement project confirmed the need for rigorous application of the guidelines amongst expert reporters to achieve the best outcomes. The completion of two loops of data collection identified the key lessons and points. However, they also highlighted the need to maintain quality by repeating the PDSA cycle to ensure ongoing improvement and maintenance of the value of USS reports for the benefit of both the patients and the surgeons in planning management. This is especially important as it contributes to the overall agenda of the guidelines



KEY LEARNING POINTS

- 1) BTA USS GUIDELINES ARE EVIDENCE BASED
- 2) GOOD QUALITY REPORTS BASED ON BTA GUIDELINES IDENTIFYING ULTRASOUND FEATURES ARE USEFUL FOR THE REVIEWING SURGEON REGARDING PATIENT MANAGEMENT PLANNING AND PATIENT ENGAGEMENT
- 3) QUALITY OF USS REPORTS DEPENDS ON RADIOLOGIST EXPERTISE AND MAINTAINANCE OF THIS EXPERTISE
- 4) RADIOLOGIST EXPERTISE IS BEST ACHIEVED BY A SMALL NUMBER OF RADIOLOGISTS IN ANY GIVEN CENTRE SPECIALISING IN THYROID SONOGRAPHY AND IN INTERPRETING THE FEATURES OF THE BTA ULTRASOUND GUIDELINES
- 5) ONGOING CLINICAL IMPROVEMENT MUST BE MAINTAINED USING THE PDSA MODEL

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3. Observer variability in the sonographic evaluation of thyroid nodules Park CS¹, Kim SH, Jung SL, Kang BJ, Kim JY, Choi JJ, Sung MS, Yim HW, Jeong SH. **J Clin Ultrasound**. 2010 Jul;38(6):287-93. doi: 10.1002/jcu.20689 PMID:20544863