Do radiology reports follow BTS guidelines for pulmonary nodules?

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1. Background
- This audit assessed whether subsequent radiology reports were compliant with these new guidelines.
- Accurate assessment of pulmonary nodules is important in guiding management strategies. The risk of malignancy is directly correlated to the size of the nodule. Small nodules (<5mm) have a low risk of malignancy and even in high risk patients no further work-up is recommended. Larger nodules of 5-8mm require CT surveillance. A clinical risk assessment for the individual patient’s chance of malignancy is recommended for nodules 8mm or greater as a guide to the most appropriate management strategy.

2. Standard and target
- 2015 BTS pulmonary nodule guidelines
- Target of 100% of radiological reports to be compliant in both identifying significant nodules and recommending appropriate action.

3. Method
An RIS search was performed of all CT reports produced in the Royal Victoria Infirmary, Newcastle in January 2016 containing the word ‘nodule’.

The following were excluded:
- Reports containing the phrase ‘no nodule’
- Non-pulmonary nodules
- Patients with known malignancy
- Multi-nodular disease (e.g. metastases, or nodular lung disease)
- Patients already on follow-up (as patients who presented before August 2015 would have been followed up under the previous Fleischner guidelines).

The remaining reports described a new solitary pulmonary nodule in patients not known to have malignancy. These reports were assessed for compliance with the guidelines. We identified two key steps in the guidelines (see figure 1) which we used as key outcomes for assessment.

4. Results for key step 1: Assessing nodule size and significance
- 55 patients had a new solitary pulmonary nodule identified
- In 22 patients there was no attempt to describe the size or significance (40%)
- Of the nodules with size and significance described, 91% of these were appropriately reported as significant if 5mm and above or not significant if less than 5mm.

5. Results for key step 2: Work-up for nodules over 5mm
- 13 patients had a significant nodule >5mm identified
- Of these, three were 5-8mm. Two of these patients had CT surveillance recommended but at an inappropriate time (six months). One was recommended for unnecessary referral to the respiratory team.
- 10 patients were identified with a nodule over 8mm. Of these, four were correctly recommended for referral to the respiratory team for a risk assessment. Three patients were inappropriately recommended for CT surveillance without risk assessment and three had no work-up recommendations in the report.

6. Discussion and conclusions
We have identified a need to improve compliance in our nodule reports with both key steps in the guidelines.
- 40% of reports could have been more helpful to the referring clinician by describing the significance of the nodule.
- An additional 9% of nodules were incorrectly categorized as significant leading to further unnecessary tests.
- Less than half of nodules over 5mm had the correct work-up described

We believe that simplifying the guidelines in a local protocol for radiologists and departmental education should help with compliance.

7. Recommendations and action plan
We have presented our audit findings at the Northern Annual Scientific meeting.

We plan to:
- Deliver departmental education focused on simplifying the guidelines for non-chest radiologists
- Re-audit following the delivery of this education. A larger initial sample size will be included as we expect to exclude a high number of reports again.

8. Limitations and further study
- The small sample size of 55 applicable reports after exclusions; a future larger cohort would eliminate any statistical biases.
- It is unclear how nodule specific radiology reports affect clinical practice. Further studies could examine whether instructions within reports alter referral behaviors.

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References