

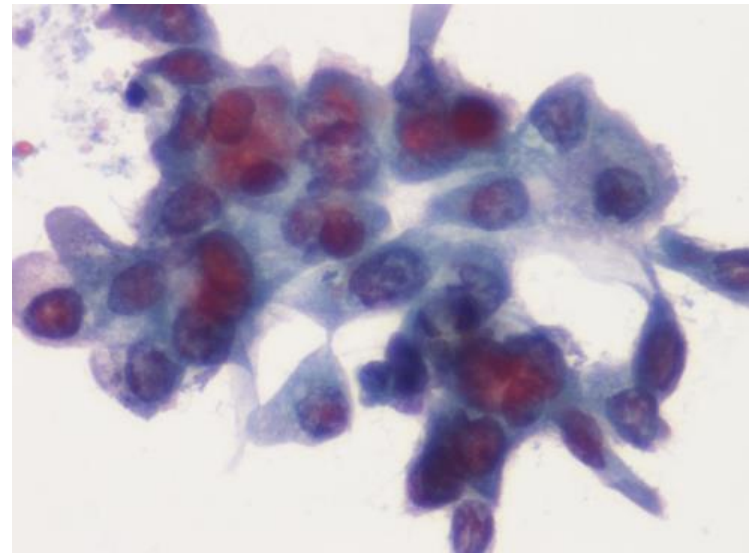
Cytology: Should we bother?

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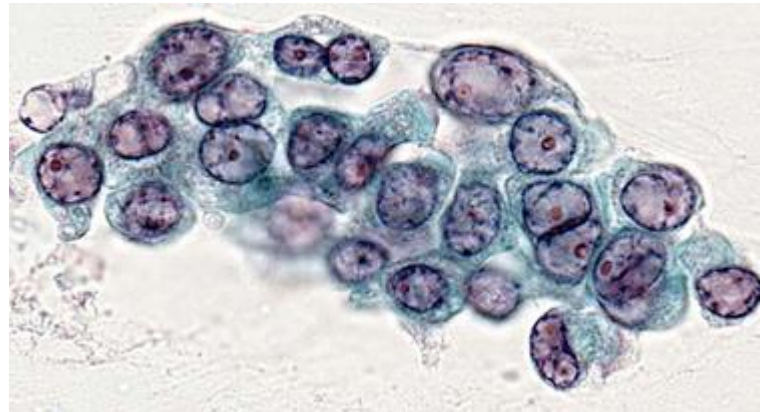
Background

- ▶ Exfoliative cytology from bronchial washings and brushings used to detect pulmonary infections and malignancies.
- ▶ Minimally invasive
- ▶ Few complications
- ▶ Quick
- ▶ Cost effective
- ▶ Cytological accuracy 77–90%

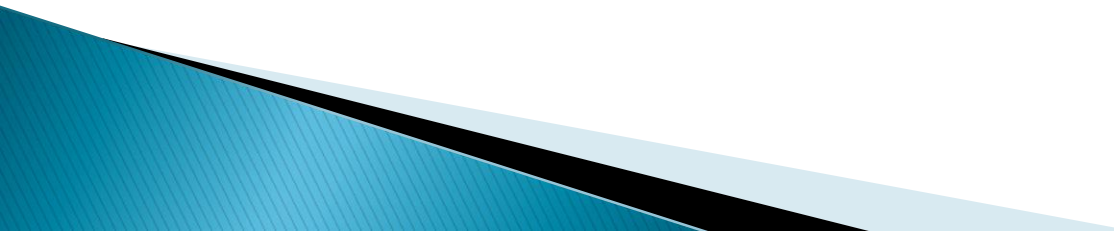


Aim

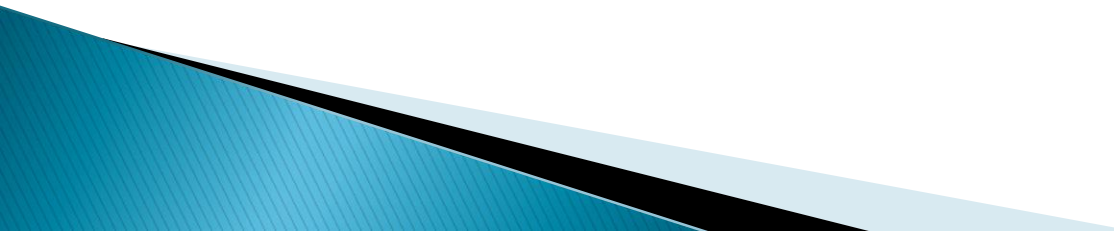
- ▶ To find the concordance rate between:
 1. Cytology from respiratory washings +/- brushings versus biopsy result versus MDT/radiology decision
 2. Cytology from respiratory washings +/- brushings versus MDT/radiology decision



Data collection

- ▶ All patients who had respiratory washings +/- brushings in 2016.
 - ▶ Clinical portal and Telepath used for data collection.
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Results

- ▶ In 2016:
 - ▶ 167 patients had washings +/- brushings
 - Brushings and washings = 94 (56.3%)
 - Washings only = 73 (43.7%)
 - ▶ Cytology and biopsy = 70 (41.9%)
 - ▶ Cytology only = 97 (58.1%)
- 

Results

- ▶ In 2016:
- ▶ 167 patients had brushings +/- washings
 - Brushings and washings = 94 (56.3%)
 - Washings only = 73 (43.7%)
- ▶ **Cytology and biopsy = 70 (41.9%)**
- ▶ Cytology only = 97 (58.1%)

Cytology versus Biopsy

- ▶ Matching results:
 - Yes = 58 (82.9%)
 - i.e. cytology and biopsy results were the same.
 - No = 12 (17.1%)
 - i.e. cytology and biopsy results were different.

Cytology versus Biopsy

- ▶ Matching results:
 - **Yes = 58 (82.9%)**
 - No = 12 (17.1%)

Cytology versus Biopsy

- ▶ Matching cytology and biopsy results: 58

Cytology and Biopsy	MDT	
Cancer	Cancer	53
Negative	Cancer	5

(Cytology and biopsy results were incorrect in 5 cases. 1 of these cases was subsequently positive for cancer on a further cytology specimen.)

Cytology versus Biopsy

- ▶ Matching results:
 - Yes = 58 (82.9%)
 - **No = 12 (17.1%)**

Cytology versus Biopsy

- ▶ Non matching results = 12

Cytology	Biopsy	MDT	
Negative	Cancer	Cancer	5
Negative	Cancer	Negative	1
Cancer	Negative	Cancer	6

- ▶ False negative = 5
- ▶ Correct cytology = 7

Results

- ▶ In 2016:
- ▶ 167 patients had brushings +/- washings
 - Brushings and washings = 94 (56.3%)
 - Washings only = 73 (43.7%)
- ▶ Cytology and biopsy = 70 (41.9%)
- ▶ **Cytology only = 97 (58.1%)**

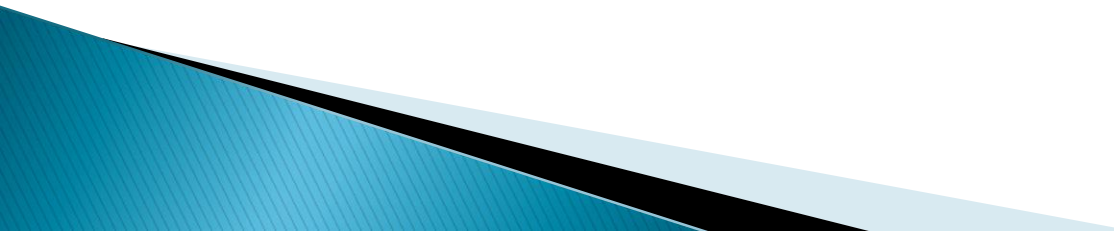
Cytology Only

- ▶ Matching results (to MDT /radiology):
 - Yes = 86 (88.7%)
 - No = 7 (7.2%)
 - Cytology -ve, MDT/radiology cancer = 6
 - Cytology and MDT Cancer, but -ve on further Ix = 1
 - Equivocal = 4 (4.1%)

▶ Equivocal cases:

Cytology	MDT/radiology	
No malignant cells	Tumour or infection	1
No malignant cells	Possible malignancy	1
Dyskaryotic cells	Adenocarcinoma	1
Dyskaryotic cells	Granulomas	1

Results conclusion

- ▶ Cytology correct: 146 (87.4%)
 - ▶ Cytology incorrect: 17 (10.2%)
 - ▶ Cytology or MDT decision equivocal: 4 (2.4%)
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Peer review

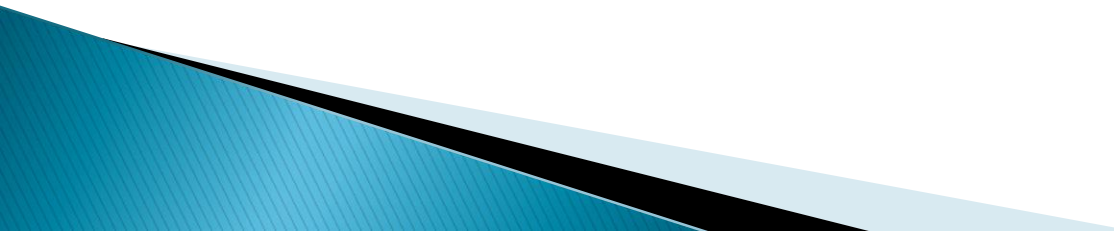
- ▶ Slides from cases with anomalous results were peer reviewed .

Cytology versus Biopsy

- ▶ Matching cytology and biopsy results: 58

Cytology and Biopsy	MDT	
Cancer	Cancer	53
Negative	Cancer	5

(Cytology and biopsy results were incorrect in 5 cases. 1 of these cases was subsequently positive for cancer on a further cytology specimen.)

- ▶ On review:
 - Case 1: Atypia at most (original reported as -ve)
 - Case 2–5: Agree with original report
- 

Cytology versus Biopsy

- ▶ Non matching results = 12

Cytology	Biopsy	MDT	
Negative	Cancer	Cancer	5
Negative	Cancer	Negative	1
Cancer	Negative	Cancer	6

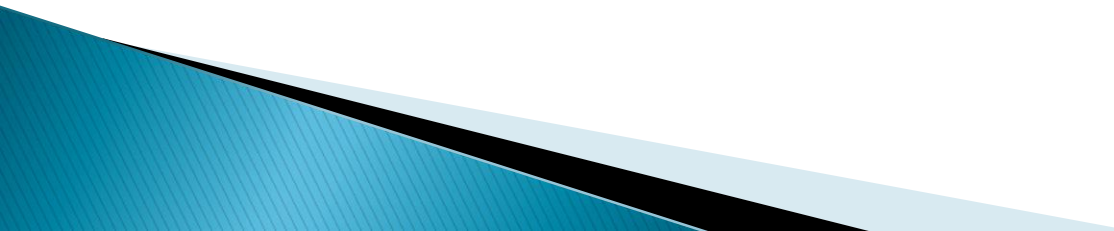
- ▶ **False negative = 5**
- ▶ **Correct cytology = 7**

False negative result

- ▶ On review:
 - Case 1: Suspicious cells (original reported as -ve)
 - Case 2: Atypia at most (original reported as -ve)
 - Case 3: Atypical cells, should have done a cell block
 - Case 4 and 5: Agree with original report

Cytology Only

- ▶ Matching results (to MDT /radiology):
 - Yes = 86 (88.7%)
 - **No = 7 (7.2%)**
 - **Cytology -ve, MDT/radiology cancer = 6**
 - Cytology and MDT Cancer, but -ve on further Ix = 1
 - Equivocal = 4 (4.1%)

- ▶ On review:
 - Case 1: Some atypical cells seen (original report was -ve)
 - Cases 2–6: Agree with original cytology report
- 

Cytology Only

- ▶ Matching results (to MDT /radiology):
 - Yes = 86 (88.7%)
 - **No = 7 (7.2%)**
 - Cytology -ve, MDT/radiology cancer = 6
 - **Cytology and MDT Cancer, but -ve on further Ix = 1**
 - Equivocal = 4 (4.1%)

Cytology Only

- ▶ Matching results (to MDT /radiology):
 - Yes = 86 (88.7%)
 - No = 7 (7.2%)
 - Cytology -ve, MDT/radiology cancer = 6
 - **Cytology and MDT Cancer, but -ve on further Ix = 1**
 - **⇒ Still call it suspicious adenocarcinoma**
 - Equivocal = 4 (4.1%)

Cytology Only

- ▶ Matching results (to MDT /radiology):
 - Yes = 86 (88.7%)
 - No = 7 (7.2%)
 - Cytology -ve, MDT/radiology cancer = 6
 - Cytology and MDT Cancer, but -ve on further Ix = 1
 - **Equivocal = 4 (4.1%)**

Cytology Only

- ▶ Matching results (to MDT / radiology):
 - Yes = 86 (88.7%)
 - No = 7 (7.2%)
 - Cytology -ve, MDT/radiology cancer = 6
 - Cytology and MDT Cancer, but -ve on further Ix = 1
 - Equivocal = 4 (4.1%)
 - ⇒ **Agree with original cytology report**

Cytology	MDT/radiology	
No malignant cells	Tumour or infection	1
No malignant cells	Possible malignancy	1
Dyskaryotic cells	Adenocarcinoma	1
Dyskaryotic cells	Granulomas	1

Results from Peer Review

- ▶ 21 (12.6%) cases peer reviewed
- ▶ In 5 (2.9%) cases the peer review disagreed with the original cytology report

Original report	Peer review decision
Negative	Atypia at most
Negative	Suspicious cells
Negative	Atypia at most
Reactive	Suspicious - cell block
Negative	Some atypical cells

Conclusion

- ▶ Cytology correct: 146 (87.4%)
- ▶ Cytology/MDT was incorrect/equivocal: 21 (12.6%)
 - No change to original report after peer review: 17
 - Change to original report after peer review: 5

So should we bother?

- ▶ Cytology vs Biopsy
 - Cytology correct more than biopsy

Cytology	Biopsy	MDT	
Negative	Cancer	Cancer	5
Negative	Cancer	Negative	1
Cancer	Negative	Cancer	6

So should we bother?

- ▶ Cytology vs Biopsy
 - Cytology correct more than biopsy

Cytology	Biopsy	MDT	
Negative	Cancer	Cancer	5
Negative	Cancer	Negative	1
Cancer	Negative	Cancer	6

Yes!

Acknowledgements

- ▶ Dr Tom Hockey
 - ▶ Teresa Russell
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