

Association between morphologic classification by medical thoracoscopy and microbiological yield among the patients with TB pleurisy

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Background

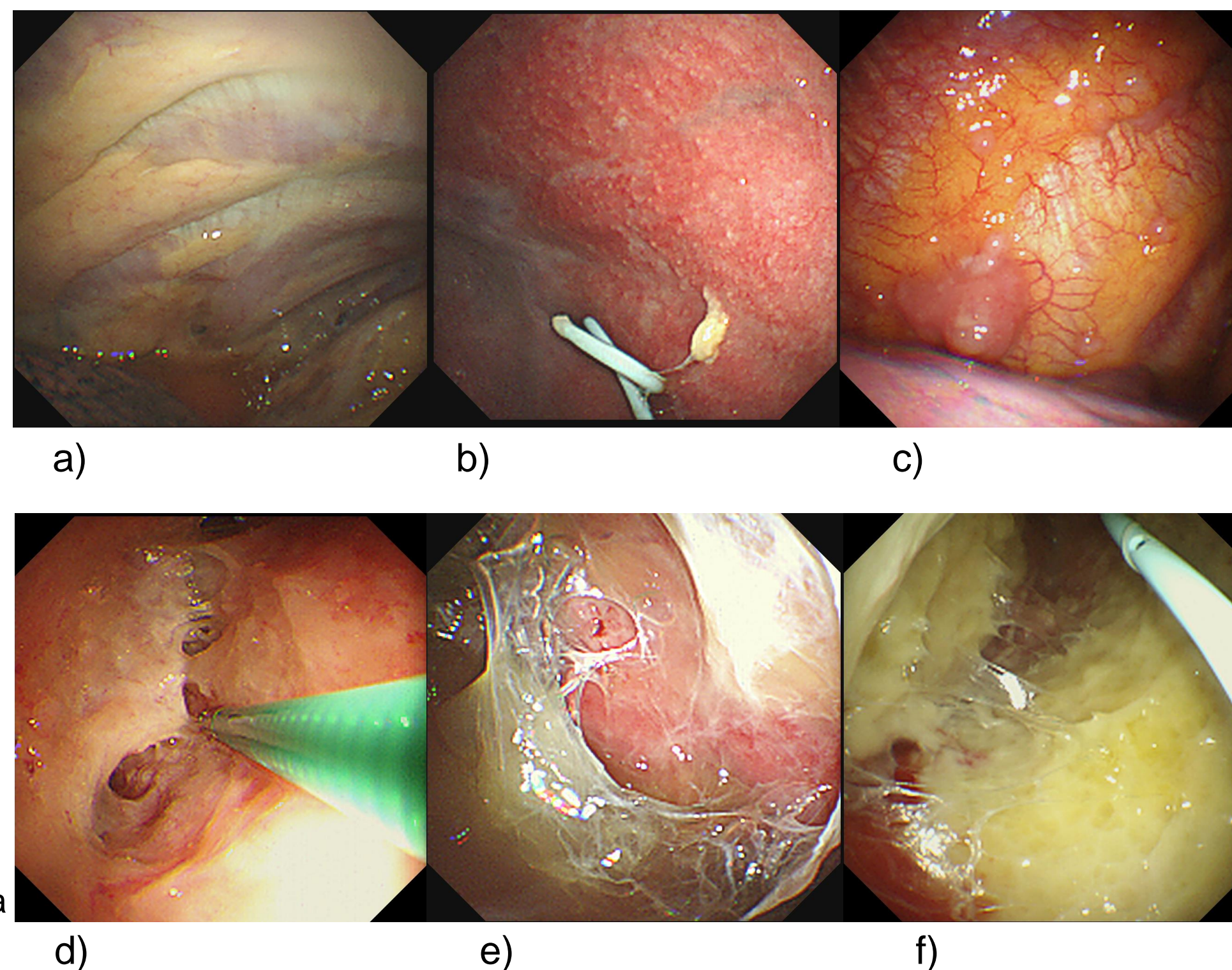
This study aimed to investigate the association between morphologic classification by medical thoracoscopy (MT) and microbiological yield among the patients with TB pleurisy.

Methods

Medical records of patients who underwent MT and were diagnosed as TB pleurisy with microbiological or histologic evidence between 2016 and 2021 at Incheon St. Mary's hospital were retrospectively reviewed.

Two respiratory physicians classified all cases into 5 groups by gross findings identified with MT. Diagnostic yield of microbiological test (acid-fast bacilli (AFB) culture or TB-polymerase chain reaction (PCR)) with overall specimens including pre-MT pleural fluid, targeted pleural washing fluid and pleural tissue by each classification was investigated.

Figure 1. Gross morphology of TB pleurisy by medical throacoscopy
 a) A few pleural nodules
 b) Mcionodules
 c) Macronodules
 d) Pseudomembrane
 e) Septated empyema
 f) Empyema



AFB culture
Empyema group (10/15, 66.7%)
Macronodule group (6/14, 42.9%)
Pseudomembrane group (5/12, 41.7%)
Micronodule group (4/18, 22.2%)
Minimal lesion group (0/3, 0.0%)

TB PCR
Empyema group (11/15, 73.3%)
Micronodule group (8/18, 44.4%)
Macronodule group (6/14, 42.9%)
Pseudomembrane group (5/12, 41.7%)
Minimal lesion group (0/3, 0.0%)

Results

A total of 62 patients (15 cases of empyema type, 14 cases of macronodular type mimicking malignancy, 12 cases of pseudomembranous type, 18 cases of micronodular type and 3 cases of minimal lesion type) were enrolled.

The proportion of AFB culture positivity was highest among the empyema group (10/15) (66.7%, (95% CI: 38.4%-88.2%)), followed by macronodule group (6/14) (42.9% (17.7%-71.1%)), pseudomembrane group (5/12) (41.7% (15.2%-72.3%)), micronodule group (4/18) (22.2% (6.4%-47.6%)), and minimal lesion group (0/3) (0.0% (0.0%-70.8%)).

That of TB-PCR was highest in the empyema group (11/15) (73.3% (44.9%-92.2%)), followed by micronodule group (8/18) (44.4% (21.5%-69.2%)), macronodule group (6/14) (42.9% (17.7%-71.1%)), pseudomembrane group (5/12) (41.7% (15.2%-72.3%)), and minimal lesion group (0/3) (0.0% (0.0%-70.8%)).

Conclusion

With our results, we can hypothesize how TB pleurisy progress - from minimal lesion to micronodules, to macronodules or pseudomembrane and eventually into empyema. Further study is needed to verify our hypothesis.



Table 1. Microbiological yield according to morphologic classification by medical thoracoscopy