Table S1. Clinical and general characteristics of the 240 cases obtained through oversampling using the SMOTE technique

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| --- | --- | --- | --- |
| 　 | Dislodgement group | Non-dislodgement group | Total |
| 　 | N=105(15 original cases and 90 synthetic cases) | N=135(random sampling with replacement from 108 original cases) | N=240 |
| Sexb | 　 | 　 | 　 |
| 1. Male | 46 (43.8%)  | 80 (59.3%)  | 126 (52.6%)  |
| 2. Female | 59 (56.2%)  | 55 (40.7%)  | 114 (47.5%)  |
| Age (years)a | 67.7 ± 10.3  | 66.2 ± 9.3  | 66.9 ± 9.7 |
| Emphysemab |  |  |  |
| 1. None | 59 (56.2%)  | 77 (57.0%)  | 136 (56.7%)  |
| 2. Trace or mild | 46 (43.8%)  | 49 (36.3%)  | 95 (39.6%)  |
| 3. Moderate | 0 (0.0%)  | 4 (3.0%)  | 4 (1.7%)  |
| 4. Confluent | 0 (0.0%)  | 5 (3.7%)  | 5 (2.1%)  |
| 5. Advanced destructive | 0 (0.0%)  | 0 (0.0%)  | 0 (0.0%)  |
| Nodule subtypeb | 　 | 　 | 　 |
| 1. Solid | 47 (44.8%)  | 86 (63.7%)  | 133 (55.4%) |
| 2. PSNs | 54 (51.4%)  | 26 (19.3%)  | 80 (33.3%)  |
| 3. GGNs | 4 (3.8%)  | 23 (17.0%)  | 27 (11.2%)  |
| Nodule size (mm)a | 11.9 ± 5.7 | 10.9 ± 6.1  | 11.4 ± 6.0  |
| Total depth (mm)a | 57.9 ± 11.3  | 59.4 ± 16.9  | 58.7 ± 14.7  |
| Chest wall depth (mm)a | 42.6 ± 9.4  | 40.7 ± 10.2  | 41.5 ± 9.9  |
| Muscle depth (mm)a | 19.4 ± 8.6  | 18.4 ± 9.4  | 18.9 ± 9.0  |
| Distance between nodule to the pleura (mm)a  | 15.0 ± 8.9  | 15.9 ± 13.9  | 15.5 ± 12.0  |
| Distance between wire tip to pleura (mm)a | 22.9 ± 11.9  | 31.1 ± 15.4  | 27.5 ± 14.5  |
| Presence of nodule penetrationb | 　 | 　 | 　 |
| 1. No | 56 (53.3%)  | 76 (56.3%)  | 132 (55.0%)  |
| 2. Penetrated | 49 (46.7%)  | 59 (43.7%)  | 108 (45.0%)  |
| Procedure time (minutes)a | 19.4 ± 13.3  | 16.2 ± 6.6  | 17.6 ± 10.2 |
| PS interval (minutes)a | 129.1 ± 51.6  | 107.7 ± 49.0  | 117.1 ± 51.2 |
| Pneumothoraxb |  |  |  |
| 1. None | 69 (65.7%)  | 64 (47.4%)  | 133 (55.4%)  |
| 2. Yes | 36 (34.3%)  | 71 (52.6%)  | 107 (44.6%)  |
| Hemorrhageb | 　 | 　 | 　 |
| 1. None | 41 (39.0%)  | 86 (63.7%)  | 127 (52.9%)  |
| 2. Yes | 64 (61.0%)  | 49 (36.3%)  | 113 (47.1%)  |
| Presence of multiple localizationb |  |  |  |
| 1. No | 76 (72.4%) | 128 (94.8%)  | 204 (85.0%)  |
| 2. Yes | 29 (27.6%)  | 7 (5.2%)  | 36 (15.0%)  |

Note: PS interval, the interval between the completion of the localization procedure and the initiation of surgery

aData are mean ± standard deviation.

bData are number of patients, with percentages in parentheses.

\*Result in bold indicates a significant finding.

P-value was calculated with Mann-Whitney test.