Clinical cases: TNM staging quiz

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### OLD T: extent of primary tumor

- **T0**: no tumor evidence
- **Tis**: carcinoma in situ
- **T1**: size ≤ 3 cm without invasion of pleura and without endoscopic invasion more proximal than lobar bronchus
- **T2**: size > 3 cm or involvement of mainstem bronchus ≥ 2 cm from carina or invasion of visceral pleura or association with atelectasis or obstructive pneumonitis extending to hilum
- **T3**: invasion of chest wall or diaphragm or mediastinal pleura or pericardial pericardium or endoscopic invasion < 2 cm of the carina without carina invasion or entire lung atelectasis or pneumonia
- **T4**: invasion of mediastinum, heart, great vessels, trachea, esophagus, vertebral body or carina or malignant pleural or pericardial effusion or satellite node within ipsilateral primary tumor lobe

### OLD N: extent of regional lymph node involvement

- **N0**: no regional lymph node involvement
- **N1**: ipsilateral lymph nodes, either
  - peribronchial
  - intrapulmonary
  - hilar
- **N2**: ipsilateral mediastinal lymph nodes or subcarinal lymph nodes
- **N3**: contralateral lymph nodes, either
  - mediastinal
  - hilar
  - ipsi or contralateral scalene or supraclavicular lymph nodes
### OLD M: presence of distant metastasis

- MO: no (known) metastasis
- M1: metastasis
  - Ipsilateral satellite nodule in a different lobe from the primary tumor is M1

### OLD: Disease stage

<table>
<thead>
<tr>
<th>Stage</th>
<th>TisN0M0</th>
<th>T1N0M0</th>
<th>T2N0M0</th>
<th>T1N1M0</th>
<th>T2N1M0</th>
<th>T3N0M0</th>
<th>T4N0M0</th>
<th>T1N2M0</th>
<th>T2N2M0</th>
<th>T3N1M0</th>
<th>T4N1M0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage IA</td>
<td>T1N0M0</td>
<td>T2N0M0</td>
<td>T1N1M0</td>
<td>T2N1M0</td>
<td>T3N0M0</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
<td></td>
</tr>
<tr>
<td>Stage IIA</td>
<td>T1N1M0</td>
<td>T2N1M0</td>
<td>T3N0M0</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
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</tr>
<tr>
<td>Stage IIB</td>
<td>T2N1M0</td>
<td>T3N0M0</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
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</tr>
<tr>
<td>Stage IIIA</td>
<td>T3N1M0</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
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<td></td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Stage IIIA</td>
<td>T4N0M0</td>
<td>T1N2M0</td>
<td>T2N2M0</td>
<td>T3N1M0</td>
<td>T4N1M0</td>
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<td></td>
</tr>
<tr>
<td>Stage IV</td>
<td>any T, any N, M1</td>
<td></td>
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</tr>
</tbody>
</table>

### New: proposed definitions for T descriptor

- TX: Primary tumor cannot be assessed, or tumor proven by the presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
- T0: No evidence of primary tumor
- T1: Tumor ≤3 cm in greatest dimension, surrounded by lung or visceral pleura, without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)
- T1a: Tumor ≤2 cm in greatest dimension
- T1b: Tumor >2 cm but ≤3 cm in greatest dimension
- T2: Tumor >3 cm but ≤7 cm or tumor with any of the following features (T2 tumors with these features are classified T2a if ≤5 cm):
  - Involves main bronchus, ≥2 cm distal to the carina
  - Invades visceral pleura
  - Associated with atelectasis or obstructive pneumonitis that extends to the hilar region but does not involve the entire lung
- T2a: Tumor >3 cm but ≤5 cm in greatest dimension
- T2b: Tumor >5 cm but ≤7 cm in greatest dimension
- T3: Tumor >7 cm or one that directly invades any of the following chest wall (including superior vena cava), phrenic nerve, aortic arch, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
- T3a: Tumor >7 cm or one that directly invades any of the following chest wall (including superior vena cava), phrenic nerve, aortic arch, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
- T3b: Tumor >7 cm or one that directly invades any of the following chest wall (including superior vena cava), phrenic nerve, aortic arch, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
- T4: Tumor of any size that invades any of the following: heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
- T4a: Tumor of any size that invades any of the following: heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
- T4b: Tumor of any size that invades any of the following: heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different ipsilateral lobe
New: Proposed definitions for N and M descriptors

- **N0**: No regional lymph node metastasis
- **N1**: Metastasis in ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
- **N2**: Metastasis in ipsilateral mediastinal and/or subcarinal lymph nodes
- **N3**: Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph nodes

- **M0**: No distant metastasis
- **M1a**: Distant tumor nodule(s) in a contralateral lobe; tumor with pleural nodules or malignant pleural (or pericardial) effusion
- **M1b**: Distant metastasis

New: Proposed TNM stage grouping

<table>
<thead>
<tr>
<th>Occult carcinoma</th>
<th>TX</th>
<th>N0</th>
<th>M0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 0</td>
<td>Tis</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage I</td>
<td>Any T1</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IA</td>
<td>T2a</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IB</td>
<td>T2a</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage III</td>
<td>Any T1</td>
<td>N1</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IIIA</td>
<td>T2b</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>T3b</td>
<td>N1</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IV</td>
<td>T1,T2,T3</td>
<td>N2</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>T4</td>
<td>N0,N1</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IV</td>
<td>Any T</td>
<td>N3</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IV</td>
<td>Any T</td>
<td>Any N</td>
<td>M1a or b</td>
</tr>
</tbody>
</table>

OLD STAGING SYSTEM: Tumor, 3 cms with ipsilateral hilar lymph nodes and contralateral nodule is....
OLD STAGING SYSTEM: Tumor, 3 cms with ipsilateral hilar lymph nodes and contralateral nodule is.

T1 N1 M1

NEW STAGING SYSTEM: Tumor, 3 cms with ipsilateral hilar lymph nodes and contralateral nodule is.

1. T2a N1 M1a
2. T2a N1 M1b
3. T1b N1 M1a
4. T1b N1 M1b
New : proposed definitions for T descriptor

- T0: No evidence of primary tumor
- Tis: Carcinoma in situ
- T1: Primary tumor cannot be assessed, or tumor proven by the presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
- T2: Primary tumor of <3 cm in greatest dimension, surrounded by lung or visceral pleura, without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)
- T2a: Primary tumor of ≤2 cm in greatest dimension
- T2b: Primary tumor of >2 cm but ≤3 cm in greatest dimension
- T3: Primary tumor of >3 cm but ≤7 cm in greatest dimension or tumor with any of the following features: T2 tumors with these features are classified T2a if ≤5 cm:
  - Involves main bronchus, ≥2 cm distal to the carina
  - Invades visceral pleura
  - Associated with infection or obstructive pneumonitis that extends to the hilar region but does not involve the entire lung
- T4: Primary tumor of any size that invades any of the following: chest wall (including superior sulcus tumors), diaphragm, phrenic nerve, mediastinal pleura, parietal pericardium, vertebral body, carina; or in contralateral lobe

New : Proposed definitions for N and M descriptors

- NX: Regional lymph nodes cannot be assessed
- N0: No regional lymph node metastasis
- N1: Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
- N2: Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
- N3: Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s)
- MX: Distant metastasis cannot be assessed
- M0: No distant metastasis
- M1: Distant metastasis
  - M1a: Separate tumor nodule(s) in a contralateral lobe, tumor with pleural nodules or malignant pleural (or pericardial) effusion
  - M1b: Distant metastasis

OLD STAGING SYSTEM / Tumor, 3.5 cms with ipsilateral lymph node and without metastasis belongs to (STAGE)
OLD STAGING SYSTEM / Tumor, 3.5 cms with ipsilateral lymph node and without metastasis belongs to (STAGE)...

- T2N1M0 (STAGE IIIB)

OLD: Disease stage

- Stage 0: TisN0M0
- Stage IA: T1N0M0  
  IB: T2N0M0
- Stage IIA: T1N1M0  
  IIB: T2N1M0  
  IIIIB: any T4, any N3, M0
- Stage IV: any T, any N, M1

NEW STAGING SYSTEM: Tumor, 3.5 cms with ipsilateral lymph node and without metastasis belongs to...

1. Stage IA
2. Stage IB
3. Stage IIA
4. Stage IIB
NEW STAGING SYSTEM: Tumor, 3.5 cms with ipsilateral lymph node and without metastasis belongs to...

1. Stage IA
2. Stage IB
3. Stage IIA
4. Stage IIB

New : Proposed TNM stage grouping

<table>
<thead>
<tr>
<th>Occult carcinoma</th>
<th>T</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>TX</td>
<td>N0</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>Tis</td>
<td>N0</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>Any T1</td>
<td>N0</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>T2b</td>
<td>N0</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>T2a</td>
<td>N0</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>Stage IIA</td>
<td>T1, T2, T3</td>
<td>N2</td>
<td>M0</td>
</tr>
<tr>
<td>T3</td>
<td>N1</td>
<td>M0</td>
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</tr>
<tr>
<td>T4</td>
<td>N0, N1</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>T4</td>
<td>N2</td>
<td>M0</td>
</tr>
<tr>
<td>Any T</td>
<td>N3</td>
<td>M0</td>
<td></td>
</tr>
<tr>
<td>Stage IV</td>
<td>Any T</td>
<td>Any N</td>
<td>M1a or b</td>
</tr>
</tbody>
</table>
OLD STAGING SYSTEM: Tumor, 5.5 cms without lymph node and without metastasis belongs to...

- T2N0M0 (Stage IB)

OLD: Disease stage

- Stage 0: TisN0M0
- Stage IA: T1N0M0
  - IB: T2N0M0
- Stage IIA: T1N1M0
  - IIB: T2N1M0
  - T3N0M0
- Stage IIIA: T3N1M0
  - T3N2M0
  - T1N2M0
  - T2N2M0
- Stage IIIB: any T4, any N3, M0
- Stage IV: any T, any N, M1

NEW STAGING SYSTEM: Tumor, 5.5 cms without lymph node and without metastasis belongs to...

1. Stage IA
2. Stage IB
3. Stage IIA
4. Stage IIB
Tumor, 5.5 cms without lymph node and without metastasis belongs to...

1. Stage IA
2. Stage IB
3. Stage IIA
4. Stage IIB

New: Proposed TNM stage grouping

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<th>Occult carcinoma</th>
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<td>Stage 0</td>
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<tr>
<td>Stage IB</td>
<td>Any T1</td>
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<td>M0</td>
</tr>
<tr>
<td>Stage II</td>
<td>T2a</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IIB</td>
<td>Any T1</td>
<td>N1</td>
<td>M0</td>
</tr>
<tr>
<td>Stage III</td>
<td>T2b</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IIIIB</td>
<td>T3</td>
<td>N0</td>
<td>M0</td>
</tr>
<tr>
<td>Stage IV</td>
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<tr>
<td></td>
<td>Any T</td>
<td>N3</td>
<td>M0</td>
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</tbody>
</table>

OLD STAGING SYSTEM: Tumor, 5.5 cms, with ipsilateral nodule and without lymph node and without metastasis is...
OLD STAGING SYSTEM: Tumor, 5.5 cms, with ipsilateral nodule and without lymph node and without metastasis is...

- T2N0M1

NEW STAGING SYSTEM: Tumor, 5.5 cms, with ipsilateral nodule and without lymph node and without metastasis is...

1. T2aN0M1
2. T4N0M0
3. T3N0M0
4. T2bN0M1
5. T3N0M0
6. T2aN0M1
7. T4N0M0
8. T3N0M0
9. T2bN0M1
**New : Proposed definitions for T descriptor**

- **T4** Primary tumor cannot be assessed, or tumor proven by the presence of malignant cells in sputum or bronchial washings but not visualized by imaging or bronchoscopy
- **T0** No evidence of primary tumor
- **Tis** Carcinoma in situ
- **T1** Tumor ≤3 cm in greatest dimension, surrounded by lung or visceral pleura, without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)
- **T1a** Tumor ≤2 cm in greatest dimension
- **T1b** Tumor >2 cm but ≤3 cm in greatest dimension
- **T2** Tumor >3 cm but ≤7 cm or tumor with any of the following features (T2 tumors with these features are classified T2a if ≤5 cm)
  - Involves main bronchus, ≥2 cm distal to the carina
  - Invades visceral pleura
  - Associated with obstruction or obstructive pneumonitis that extends to the hilar region but does not involve the entire lung
- **T2a** Tumor >3 cm but ≤5 cm in greatest dimension
- **T2b** Tumor >5 cm but ≤7 cm in greatest dimension
- **T3** Tumor >7 cm or one that directly invades any of the following: chest wall (including superior sulcus tumors), diaphragm, phrenic nerve, mediastinal pleura, pericardium, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different (ipsilateral) lobe
- **T4** Tumor of any size that invades any of the following: mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different (ipsilateral) lobe

**New : Proposed definitions for N and M descriptors**

- **NX** Regional lymph nodes cannot be assessed
- **N0** No regional lymph node metastasis
- **N1** Metastasis in ipsilateral hilar lymph nodes and/or mediastinal lymph nodes, including involvement by direct extension
- **N1a** Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
- **N2** Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraclavicular lymph node(s)
- **N3** Metastasis in contralateral hilar lymph nodes, contralateral lung nodule and ipsilateral pleural effusion
- **M1** Distant metastasis cannot be assessed
- **M0** No distant metastasis
- **M1** Distant metastasis
- **M1a** Separate tumor nodule(s) in a contralateral lobe, tumor with pleural nodules or malignant pleural (or pericardial) effusion
- **M1b** Distant metastasis

**OLD STAGING SYSTEM : Tumor, 7.5 cms with contralateral hilar lymph nodes, contralateral lung nodule and ipsilateral pleural effusion is...**
OLD STAGING SYSTEM: Tumor, 7.5 cms with contralateral hilar lymph nodes, contralateral lung nodule and ipsilateral pleural effusion is...

T4 N3 M1

NEW STAGING SYSTEM: Tumor, 7.5 cms with contralateral hilar lymph nodes, contralateral lung nodule and ipsilateral pleural effusion is...

1. T2a N2 M1a
2. T3 N3 M1a
3. T3 N3 M1b
4. T4 N3 M1a
New : proposed definitions for T descriptor

- T0: No evidence of primary tumor
- Tis: Carcinoma in situ
- T1: Tumor ≤3 cm in greatest dimension, surrounded by lung or visceral pleura without bronchoscopic evidence of invasion more proximal than the lobar bronchus (i.e., not in the main bronchus)
- T1a: Tumor ≤2 cm in greatest dimension
- T1b: Tumor >2 cm but ≤3 cm in greatest dimension
- T2: Tumor >3 cm but ≤7 cm or tumor with any of the following features (T2 tumors with these features are classified T2a if ≤5 cm):
  - Involves main bronchus, ≥2 cm distal to the carina
  - Invades visceral pleura
  - Associated with pleural effusion
- T2a: Tumor >3 cm but ≤5 cm in greatest dimension
- T2b: Tumor >5 cm but ≤7 cm in greatest dimension
- T3: Tumor >7 cm or one that directly invades any of the following: chest wall (including superior vena cava tumor), diaphragm, phrenic nerve, mediastinal pleura, pericardium, superior sulcus tumors (i.e., tumors arising in the major bronchus ≤2 cm distal to the carina without involvement of the carina or associated assessment or obstructive pneumonitis of the entire lung or separate tumor nodule(s) in the same lobe
- T4: Tumor of any size that invades any of the following: mediastinum, heart, great vessels, trachea, recurrent laryngeal nerve, esophagus, vertebral body, carina, separate tumor nodule(s) in a different (ipsilateral) lobe

New : Proposed definitions for N and M descriptors

- NX: Regional lymph nodes cannot be assessed
- N0: No regional lymph node metastasis
- N1: Metastasis in ipsilateral peribronchial and/or ipsilateral hilar lymph nodes and intrapulmonary nodes, including involvement by direct extension
- N2: Metastasis in ipsilateral mediastinal and/or subcarinal lymph node(s)
- N3: Metastasis in contralateral mediastinal, contralateral hilar, ipsilateral or contralateral scalene, or supraventricular lymph node(s)
- MX: Distant metastasis cannot be assessed
- M0: No distant metastasis
- M1: Distant metastasis
- M1a: Separate tumor nodule(s) in a contralateral lobe, tumor with pleural nodules or malignant pleural (or pericardial) effusion
- M1b: Distant metastasis

Thank you !