April 2013 Pulmonary Case of the Month: A Suffocating Relationship

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History of Present Illness
A 70 year old woman from Oregon was referred by urology for evaluation of an abnormal thoracic CT scan. She was asymptomatic.

PMH, SH, FH
She has a prior history of retroperitoneal fibrosis with ureteral obstructions requiring stents and a transient ischemic attack in 2009. During 2012 she developed hypertension and a thoracic CT was done. She has never smoked and is a widowed housewife. There is no family history of lung disease, although her husband died from lung cancer. Her present medications include: amlodipine 10 mg/day, oxybutynin (Ditropan XL) 10 mg/day, and prednisone 5 mg daily.

Physical Examination
Her physical examination was unremarkable.

Radiography
Her chest CT scan is shown in Figure 1.

Figure 1. Representative thoracic CT static images from mediastinal windows (panels A-C) and lung windows (panel D-F).
Which of the following is true regarding the CT scan?
   1. There is a right upper lobe mass
   2. There are bilateral pleural effusions
   3. There is lung fibrosis predominately involving the lower lobes
   4. There are diffuse ground glass opacities
   5. There are multiple pleural plaques
The thoracic CT scan shows multiple pleural plaques. None of the other abnormalities listed are present.

Which of the following is associated with pleural plaques?
1. Rheumatoid arthritis
2. Asbestos exposure
3. Uremic pleuritis
4. Hemothorax
5. All of the above
All are associated with pleural plaques which are fibrotic areas between the parietal and visceral pleural surfaces (Table 1).

Table 1. Common cause of pleural plaques

<table>
<thead>
<tr>
<th>Cause</th>
<th>Pleural Plaque Type</th>
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<tr>
<td>Asbestos exposure</td>
<td>Metastatic pleural disease</td>
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<tr>
<td>Collagen vascular disorders – particularly RA</td>
<td>Hemothorax</td>
</tr>
<tr>
<td>Uremic pleuritis</td>
<td>Familial</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>IgG4-related disease</td>
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<tr>
<td>Ergot derivatives</td>
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Our patient had no history of these causes of pleural plaques.

Which of the following histories could shed light on the cause of her pleural plaques?

1. Second hand smoke exposure
2. Her husband’s occupation
3. Exposure to fumes from a nearby paper processing mill
4. History of exposure to moldy redwood bark
5. All of the above
Correct!

2. Her husband’s occupation

Her husband had been a pipefitter and extensively exposed to asbestos. Our patient washed his clothes which were frequently covered with asbestos dust. Second hand smoke exposure has been associated with respiratory disease but not pleural plaques. Similarly, chlorine exposure from paper mills and exposure to moldy redwood bark have been associated with respiratory disease but not pleural plaques (1,2).

The patient has what appears to be an anterior mediastinal mass (Figure 2).

Figure 2. Thoracic CT scan showing anterior mediastinal abnormality (arrows).

Which of the following have been associated with an anterior mediastinal mass?

1. Teratoma
2. Thymoma
3. Thyroid tumor
4. Lymphoma
5. All of the above
All are causes of anterior mediastinal masses and account for the 4 T’s many of us learned as medical students with terrible added before lymphoma (3). However, this abnormality appears different. It has more the appearance of diffuse pleural thickening. Because the abnormality extends retrosternally across the mediastinum from pleural surface to pleural surface, some authors have referred to this as “bridging” (4). In a series of patients with retroperitoneal fibrosis, Uibu et al. (5) reported 3 of 22 subjects with retroperitoneal fibrosis secondary to asbestos exposure, had exceptionally large pleural masses that were located anteriorly in the pleural space and continued into the anterior mediastinum (Figure 3).

Figure 3. Pleural masses (arrows) in patients with retroperitoneal fibrosis from reference 5. Panel A: a 55 year old former pipefitter. Panel B: a 62 year old storeman who had used asbestos gloves and sealing tapes and done some pipe insulation. Panel C: a 76 year old construction cleaner.

These masses appear similar to our patient’s. In Uibu’s series of patients with retroperitoneal fibrosis not secondary to asbestos exposure, none had similar patterns of pleural thickening (5).
Retroperitoneal fibrosis has causes similar to pleural fibrosis including malignant disease, radiation, abdominal surgery, hematomas, and infection. However, methylsergide use and asbestos exposure for > 10 yr (RR 8.84) appear to be frequently common (6,7).

References


