PULMONARY PATHOLOGY JOURNAL CLUB
August 2007 articles

Discussion


Reviews

Marboe CC. Pathology of Lung Transplantation. Seminars in Diagnostic Pathology. 2007;24:188.


Stewart S. Pulmonary Infections in Transplantation Pathology. Archives of Pathology and Laboratory Medicine. 2007;131:1219.

Wang CW, Colby TD. Histiocytic Lesions and Proliferations in the Lung. Seminars in Diagnostic Pathology. 2007;24:162.

Case Report
I. DISCUSSION- M. Sackett

Chronic Hypersensitivity Pneumonitis: CT Feature-Comparison with Pathologic Evidence of Fibrosis and Survival

H. Sahin, K. Brown, D. Curran-Everett, V. Hale, C. Cool, J. Vourlekis and D. Lynch

Radiology: Volume 244: Number 2-August 2007, pp591-598

Background:
- 40% of chronic hypersensitivity pneumonitis (HP) have evidence of lung fibrosis
- Prior study correlated the presence of fibrosis with increased mortality
  - Hazard ratio (HR) of 2.9 for histopathologic honeycomb fibrosis
  - HR of 2.2 for degree of fibrosis at surgical lung biopsy
- Purpose: Compare in patients with chronic HP the CT features suggestive of fibrosis with pathologic evidence of fibrosis at surgical lung biopsy and to compare a UIP pattern at CT with survival.

Methods:
- Retrospective review of Interstitial Lung Disease Program database permitted to retrieve 26 patients with chronic HP that had available CT scans and surgical lung biopsy. Clinical records were reviewed to confirm clinical features and absence of an alternative diagnosis such as infection. Antigen exposure history was not required for diagnosis.
- All patients were treated by antigen avoidance/removal and corticosteroids. When there was no response to this treatment, cytotoxic therapy was added.
- Median follow-up 5.7 years (4.7 y post CT scan). Of the 10 deaths that occurred: 2 were attributed to progressive interstitial lung disease, 1 to sepsis, 1 to lung cancer, 1 to surgery and 5 were of unknown causes.
- Pathology: Thorascopic biopsies for all patients were blindly evaluated by 2 pathologists. Criteria for chronic HP were: predominantly lymphoplasmocytic interstitial pneumonitis with bronchocentric accentuation and poorly formed septal granulomas. Interstitial fibrosis was defined as expansion of alveolar septa by mature collagen in >5% of the slide. 89% interobserver agreement (k=0.75).
- Radiology: CT scans were reviewed blindly and independently by 2 chest radiologists in search for fibrosis. Reticular pattern, honeycombing, centrilobular nodules, ground-glass infiltration, emphysema, mosaic attenuation, traction bronchiectasis, and lobar volume loss were evaluated. Overall CT patterns were classified as HP (centrilobular nodules, ground-glass infiltration, mosaic attenuation, middle or upper lobe distribution, +/- fibrosis), UIP (subpleural fibrosis, lower zone predominance, and no or minimal ground-glass infiltration; honeycomb changes no required), mixed HP/UIP, and other. 2 groups were formed: with UIP (including mixed HP/UIP) and without UIP.

Results:
- **15/26 (58%) had fibrotic HP histology**, including 9 patients without UIP on CT.
- **6/26 (23%) had UIP pattern** (2 pure, 4 mixed HP/UIP) on CT. These 6 patients all had fibrotic HP histology.
• Fibrotic vs nonfibrotic HP histology, along with UIP vs non-UIP on CT, showed similar signs and symptoms, but fibrotic HP histology and UIP on CT were each associated with greater restrictive physiology and decreased gas exchange.

• Only patients with fibrotic HP histology showed honeycombing (31% of all patients), traction bronchiectasis, and upper lobe volume loss on CT, and their extent of reticular pattern was greater than nonfibrotic UIP.

• **Survival was shorter in fibrotic HP vs nonfibrotic HP (P=.001),** but there was no difference in survival between UIP on CT vs non-UIP. For fibrotic HP, median survival was 3.9 y with a 5 y mortality rate of 61% (vs 30% for the entire group).

• No relationship between type of antigen exposure and histology or CT patterns.

**Discussion:**

• Some CT features of HP (reticular pattern and honeycombing) overlap with IPF and collagen vascular diseases.

• Limitations of this study include small number of patients, possible selection bias of patients with fibrosis and too long interval between biopsy and CT.

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**Comparison of Clinical and Physiologic Features in Patients with and in Patients without Histologic Fibrosis**

<table>
<thead>
<tr>
<th>Findings</th>
<th>Fibrotic HP (n = 15)</th>
<th>Nonfibrotic HP (n = 11)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean age (y)</td>
<td>65.8 ± 9.3</td>
<td>64.5 ± 11.7</td>
<td>.77</td>
</tr>
<tr>
<td>No. of women*</td>
<td>9 (63)</td>
<td>6 (55)</td>
<td>.99</td>
</tr>
<tr>
<td>No. of smokers*</td>
<td>11 (73)</td>
<td>9 (82)</td>
<td>.23</td>
</tr>
<tr>
<td>Symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dyspnea*</td>
<td>15 (100)</td>
<td>11 (100)</td>
<td>NA</td>
</tr>
<tr>
<td>Cough*</td>
<td>11 (73)</td>
<td>6 (54)</td>
<td>.42</td>
</tr>
<tr>
<td>Sputum*</td>
<td>9 (60)</td>
<td>5 (45)</td>
<td>.99</td>
</tr>
<tr>
<td>Wheezes*</td>
<td>7 (47)</td>
<td>7 (64)</td>
<td>.45</td>
</tr>
<tr>
<td>Median duration of symptoms (y)</td>
<td>5 (1–25)</td>
<td>3 (1–4)</td>
<td>.08</td>
</tr>
<tr>
<td>Sino*</td>
<td>13 (87)</td>
<td>6 (54)</td>
<td>.99</td>
</tr>
<tr>
<td>Gastro*</td>
<td>4 (27)</td>
<td>1 (9)</td>
<td>.33</td>
</tr>
<tr>
<td>Pulmonary function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median total lung capacity (L)</td>
<td>73 (48–105)</td>
<td>97 (96–120)</td>
<td>.009</td>
</tr>
<tr>
<td>Median functional residual capacity</td>
<td>68 (31–115)</td>
<td>80.5 (50–140)</td>
<td>.05</td>
</tr>
<tr>
<td>Median residual volume (%)</td>
<td>102.26 (169)</td>
<td>154.25 (239)</td>
<td>.06</td>
</tr>
<tr>
<td>Median forced vital capacity (L)</td>
<td>66 (44–98)</td>
<td>60.5 (44–95)</td>
<td>.33</td>
</tr>
<tr>
<td>Median forced expiratory volume in 1 second (%)</td>
<td>59 (40–98)</td>
<td>68 (33–91)</td>
<td>.97</td>
</tr>
<tr>
<td>Gas exchange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median D/A</td>
<td>42.05–54</td>
<td>60 (40–110)</td>
<td>.004</td>
</tr>
<tr>
<td>Median D/E</td>
<td>72.5 (41–134)</td>
<td>101 (55–129)</td>
<td>.06</td>
</tr>
<tr>
<td>Median resting Paco2 (mm Hg)</td>
<td>54 (44–78)</td>
<td>61.5 (57–75)</td>
<td>.02</td>
</tr>
</tbody>
</table>

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**Comparison of Extent and Prevalence of CT Findings in Patients with and in Patients without Histologic Fibrosis**

<table>
<thead>
<tr>
<th>CT Findings</th>
<th>Fibrotic HP (n = 15)</th>
<th>Nonfibrotic HP (n = 11)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>UIP patient*</td>
<td>0 (40)</td>
<td>0 (40)</td>
<td>.02</td>
</tr>
<tr>
<td>Honeycombing*</td>
<td>8 (53)</td>
<td>0 (0)</td>
<td>.007</td>
</tr>
<tr>
<td>Lower lobe volume loss*</td>
<td>7 (47)</td>
<td>3 (27)</td>
<td>.43</td>
</tr>
<tr>
<td>Traction bronchiectasis*</td>
<td>8 (53)</td>
<td>0 (0)</td>
<td>.007</td>
</tr>
<tr>
<td>Upper lobe volume loss*</td>
<td>1 (7)</td>
<td>0 (0)</td>
<td>.09</td>
</tr>
<tr>
<td>Reticular pattern with extent &gt;25%</td>
<td>11 (73)</td>
<td>3 (27)</td>
<td>.02</td>
</tr>
<tr>
<td>Ground-glass attenuation*</td>
<td>2.5 ± 1.7</td>
<td>2.8 ± 1.1</td>
<td>.69</td>
</tr>
<tr>
<td>Centrilobular nodules*</td>
<td>0.7 ± 0.9</td>
<td>0.9 ± 1.5</td>
<td>.73</td>
</tr>
<tr>
<td>Empysematous*</td>
<td>0.3 ± 0.8</td>
<td>0.6 ± 1.1</td>
<td>.34</td>
</tr>
<tr>
<td>Muscular attenuation*</td>
<td>1.0 ± 0.9</td>
<td>1.1 ± 0.9</td>
<td>.04</td>
</tr>
</tbody>
</table>

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**Survival**

Figure 3: Graph shows survival curves for patients with and without fibrotic HP at histologic examination. Evidence of fibrotic HP histology examination in chronic HP is associated with decreased survival.
Multifocal Microcysts and Papillary Cystadenoma of the Lung in von Hippel-Lindau Disease

J. Klein, Z. Zhuang, I. Lubensky, T. Colby, F. Martinez, and K. Leslie
Am J Surg Pathol, Volume 31, Number 8, August 2007, pp 1292-1296

Background:
- Von Hippel-Lindau (VHL) disease is an autosomal dominant inherited disorder characterized by a predisposition to multiple neoplasms and cysts in many organs including kidney, CNS, retina, and pancreas.
- Apart from a report of multiple hepatic and pulmonary hemangioblastomas, primary lung lesions related to VHL have never been reported.

Case report:
- 43 y.-o. woman, never smoker, with VHL disease who developed pheochromocytoma, multiple hemangioblastomas in retina and CNS, RCC, and multiple renal and pancreatic cysts.
- A 2.0 x 1.0 cm nodule was noted on a routine CT scan near the hilum of the left lower lobe of lung (review of prior CT showed a 0.5 cm growth in 5 years). The lesion did not enhance on PET scan. A left lower lobectomy was performed.
- **Gross:** 1.0 cm cyst with a 0.3 cm papillary excrescence (smaller size than imaging attributed to collapse of cyst). Intraoperatively, the surgeon noted multiple minute (<1mm) cysts throughout the lung.
- **Microscopy:** Main cyst containing a blunt branching papillary structure with a fibrovascular core, lined by a single layer of bland cuboidal cells, consistent with papillary cystadenoma. Surrounding parenchyma with diffuse microscopic cysts and interconnected channels. Cysts were <2.5mm and lined by flattened to cuboidal mainly bland cells, with focal hobnail cytoplasmic projections and some infoldings or papillary projections. Cysts were in a peribronchovascular distribution with focal transition from bronchial to cyst, suggesting a bronchiolar origin. The stroma was fibrous with thin-walled vessels, small lymphoid aggregates, and rare calcifications. Lumens were empty or contained granular eosinophilic material or colloid-like secretions.
- **Immunohistochemistry:**
  - + : diffusely for CK7, TTF-1 (which excludes metastatic RCC), and vimentin, weakly + for polyclonal CEA, patchy + for E-cadherin.
  - - : CD10 (excluding metastatic RCC), CK20, B72.3, and thyroglobulin.
- **Molecular:** LOH for VHL gene in lung cyst (with D3S1110 marker) confirms link with VHL disease in this patient.

Discussion:
- Lung cysts may be an unrecognized pulmonary manifestation of VHL disease. They may be difficult to assess because of their small size.
- Lung papillary cystadenocarcinoma and microcysts must be considered in the differential diagnosis in a VHL patient with suspected RCC metastatic to lung. TTF-1+ and CD10- are helpful to exclude RCC.
Cystic Lung Disease in Birt-Hogg-Dube Syndrome
D. Ayo, G. Aughenbaugh, E. Yi, J. Hand and J. Ryu
Chest, Volume 132, Number 2, August 2007, pp 679-68

Background:
- Birt-Hogg-Dube Syndrome (BHD) is a rare autosomal dominant heritable disorder caused by a germline mutation in BHD (FLCN) gene on 17p11.2 that encodes for folliculin, a protein expressed in skin, kidney and lung.
- BHD is characterized by cutaneous fibrofolliculomas, trichodiscomas, and skin tags, along with renal tumors (oncocytic hybrid tumor, clear cell, chromophobe and papillary RCC). Pulmonary cysts and spontaneous pneumothorax have recently been described in BHD.
- The purpose of this study is to describe clinical, radiologic and histopathologic features of cystic lung disease in BHD.

Methods:
- Mayo Clinic computer files were searched for diagnosis of BHD or fibrofolliculoma between 1/1/1998 and 12/31/2005. 7 patients with BHD were identified, two of which were excluded (1 had no chest imaging and the other had normal chest imaging). Data were extracted from medical files.

Results:

<table>
<thead>
<tr>
<th>Age, yr/ Gender</th>
<th>Smoking</th>
<th>Clinical Presentation</th>
<th>FLCN Gene Mutation</th>
<th>CT of the Chest</th>
<th>Pulmonary Function</th>
<th>Follow-up CT Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>54/male</td>
<td>Never</td>
<td>Skin lesion; no respiratory symptoms or renal tumors</td>
<td>G618A to adenine substitution at nucleotide 1,668 in exon 20</td>
<td>5 to 10 cysts (3 to 8 mm in diameter) in each lung</td>
<td>Normal results</td>
<td>Stability CT findings at 27 mo</td>
</tr>
<tr>
<td>63/male</td>
<td>Never</td>
<td>Skin lesion; prior renal resections (clear cell renal carcinoma); no respiratory symptoms</td>
<td>Not tested</td>
<td>5 to 10 cysts (4 to 16 mm in diameter) in each lung</td>
<td>Not done</td>
<td>None</td>
</tr>
<tr>
<td>87/female</td>
<td>Previous, 30 pack-yr</td>
<td>Recurrent right pneumothorax; 12 previous episodes of ipsilateral pneumothorax; skin lesions present but no renal tumors</td>
<td>Not tested</td>
<td>10 to 15 cysts (5 to 25 mm in diameter) in each lung and more extensive in bases</td>
<td>Mild nonspecific pattern*</td>
<td>Stable CT findings at 66 mo</td>
</tr>
<tr>
<td>58/male</td>
<td>Previous, 45 pack-yr</td>
<td>Renal mass; prior renal resections (chromophobe cell carcinoma, oncocytoma); two previous episodes of ipsilateral pneumothorax; no skin lesions.</td>
<td>Deletion of a single cytosine nucleotide in exon 11</td>
<td>Innumerable cysts (2 to 80 mm in diameter) bilaterally, more extensive in bases; emphysema</td>
<td>Mild nonspecific pattern*</td>
<td>Slight progression of CT findings at 13 mo</td>
</tr>
<tr>
<td>50/male</td>
<td>Previous, 80 pack-yr</td>
<td>Skin lesions; mild exertional dyspnea and chronic productive cough, clear cell renal cancer resected later</td>
<td>Duplication of a single cytosine nucleotide in exon 11</td>
<td>Innumerable cysts (6 to 35 mm in diameter) bilaterally; emphysema</td>
<td>Mild obstruction</td>
<td>Stable CT findings at 3 mo</td>
</tr>
</tbody>
</table>
• **Patient characteristics:** 4/5 were men, mean age at pulmonary evaluation of 56.4 y, none were current smokers (but 3 ex-smokers), 2/5 had respiratory symptoms (2 with exertional dyspnea, 1 productive cough), **2/5 had recurrent pneumothoraces** (both ex-smokers).

• **Imaging:** Chest X-ray showed a loculated pneumothorax in 1 patient and cysts in another. **CT revealed cystic lung disease in all** with round to oval variable sized (few mm to cm) randomly distributed cysts (except for preferential basal involvement in 2/5). **Smokers had more extensive disease and larger cysts.** Follow-up CT showed minimal progression in 1 of 4 patients after 20 months.

• **Pulmonary function tests:** 2 out of 4 showed mild obstruction (smokers), 1 of 4 non specific abnormalities (smoker), and 1 of 4 a normal test (non-smoker).

• **Surgical lung biopsy:** available in 1 out of 5 patients. Slide review showed widespread emphysematous changes. Visceral pleura and interlobular septa showed patchy fibrosis, mesothelial hyperplasia and eosinophilic pleuritis, consistent with a history of recurrent pneumothorax. A focus of air accumulation in the interlobular septa displaced the adjacent vein. There was no air cyst or intrapleural bleb in the pleura.

• **Follow-up:** median 36 months. No pneumothorax or other respiratory events. 2 patients developed renal cancer.

**Discussion:**

• Mutations FLCN gene are responsible for BHD, and are also found in the syndrome of dominantly inherited spontaneous pneumothorax, in which patients show randomly scattered cystic lung lesions.

• **Differential diagnosis** includes other multifocal or diffuse cystic lung diseases such as LAM (radiologic features very similar to BHD), pulmonary Langerhans cell histiocytosis (irregular cysts in upper and mid lobes with architectural distorsion), LIP, Pneumocystis pneumonia, and rarely metastatic carcinomas or sarcomas.

• Limitations: only 5 patients, only one of which had surgical lung biopsy.

**Conclusion:**

• Cystic lung disease in BHD seems more severe in smokers. Follow-up suggests a slow rate of disease progression.
II. CASES FOR DISCUSSION- TVC


Hypothesis: There is a subset of patients with stage IIIB lung cancer that may have a more favorable prognosis. Stage IIIB lung cancer has a poor prognosis even after complete resection with the presence of intrapulmonary metastasis, even within the same lobe as the primary cancer, is an independent, unfavorable prognostic factor and classified as T4.

Methods: Among 122 cases of surgically resected stage IIIB lung cancer with what had been interpreted as intrapulmonary metastasis, 15 lacked lymph node metastases and lacked vascular invasion and these 15, interpreted as the “favorable group,” were compared with the remaining 107 cases.

There are three possible routes of intrapulmonary metastases: Lymphatic, blood vessel, airway. In this study, intrapulmonary metastasis was defined as: Tumor cells floating in air spaces separate from and/or around the primary tumor and having cytologic similarity to the primary tumor. Lymphatic and blood vascular invasion were defined as usual.

For the 15 cases there was a 92% five-year survival in contrast to a five-year survival in the range of 30-35% for the remaining cases. 13 of the 15 cases also showed lepidic nondestructive growth (BAC pattern). Of the 107 cases used for comparison, only 10 (9.4%) showed a BAC pattern.

The authors conclude that they are able to extract a subset of patients with IIIB lung cancer with an extremely good outcome from a group of patients traditionally considered to have a poor prognosis.

Comment: I think many would consider some of the “intrapulmonary metastases” in this case to represent separate primaries, and this would be a very interesting group to do some genetic studies on to compare tumors.

Background and Hypothesis: Measles is known to cause serious damage to immune function and the hypothesis of the study was that this could be demonstrated by quantitative immunohistochemistry in a large series of autopsies of children dying from measles.

Methods: 42 autopsies of patients dying with measles pneumonia were selected from two large pediatric hospitals in Brazil. All patients were under 20 years of age and had well-documented measles without complicating bacterial infections. The mean age was 29 months (4-228 months). 18 age-matched controls were selected among children who had congenital heart disease and died during surgery. They were normal!

The investigators assessed immune cell phenotype with CD4, CD8, CD20, CD45RO, CD68, markers for NK cells and S100. They also looked at in situ cytokine production immunohistochemically with markers for IL-1, IL-2, IL-4, IL-10 and IL-12.

There is very little demographic information regarding patients in terms of duration of illness, symptomatology, prior conditions, etc. Specifically, it would be of interest to know if the patient’s classic giant cell pneumonia had a longer duration of the illness prior to autopsy.

The measles cases were divided into 27 with what was described as interstitial pneumonitis (probably mild DAD) and 13 with giant cell pneumonia. The pathologic changes in the giant cell pneumonia were significantly greater in terms of alveolar septal enlargement, pneumocyte necrosis, and squamous metaplasia.

Not surprisingly, there were profound differences between the groups. Patients had a severe depletion of cell staining for CD4, CD20, CD68, NK and S100 in alveoli and bronchus-associated lymph node tissue without a depletion of CD8 positive cells. These findings were similar in IL-10 and IL-12 producing cells where depleted in patients whereas IL-1, interferon in the alveoli of patients compared to controls.

The authors conclude that “quantitative insight to immune cell phenotype and function in the lung in measles demonstrated severe immune dysfunction with loss of key cells, such as dendritic, CD4 positive, NK positive, and efficient cytokine production, which allows for a better comprehension of local reactions in this process.”

Comment: I am not sure how to interpret these findings. Having one control group of basically normal histology may not be entirely appropriate to allow one to put the abnormalities in measles in context with other conditions.
Thoracic and Cardiovascular Surgery. 2007;134:399.

Objective: Assess the prognosis of pleomorphic (spindled and/or giant cell) carcinoma of the lung as defined by 1999 WHO criteria.

Materials: Forty-five patients with pleomorphic carcinoma were identified from surgical resections during a 21-year period, from 1985 to 2006. Routine preoperative evaluation and staging were done.

The mean age was 66 (33 to 80); 90% were male; 82% were current or former smokers; and the majority (87%) were treated by a lobectomy. A few pneumonectomies, segmentectomies, and wedge resections were included.

The tumor varied from 2.3 to 7 cm in size. Clinical staging was as follows:

<table>
<thead>
<tr>
<th>Factor</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical stage</td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>5 (11.1%)</td>
</tr>
<tr>
<td>IB</td>
<td>16 (35.6%)</td>
</tr>
<tr>
<td>IIA</td>
<td>2 (4.4%)</td>
</tr>
<tr>
<td>IIB</td>
<td>14 (31.1%)</td>
</tr>
<tr>
<td>IIAI</td>
<td>7 (15.6%)</td>
</tr>
<tr>
<td>IIIB</td>
<td>1 (2.2%)</td>
</tr>
<tr>
<td>IV</td>
<td>0</td>
</tr>
<tr>
<td>Pathologic stage</td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>5 (11.1%)</td>
</tr>
<tr>
<td>IB</td>
<td>9 (20.0%)</td>
</tr>
<tr>
<td>IIA</td>
<td>0</td>
</tr>
<tr>
<td>IIB</td>
<td>16 (35.6%)</td>
</tr>
<tr>
<td>IIIA</td>
<td>10 (22.2%)</td>
</tr>
<tr>
<td>IIIB</td>
<td>3 (6.7%)</td>
</tr>
<tr>
<td>IV</td>
<td>2 (4.4%)</td>
</tr>
<tr>
<td>Sarcomatous elements</td>
<td></td>
</tr>
<tr>
<td>Spindle</td>
<td>23 (51.1%)</td>
</tr>
<tr>
<td>Giant</td>
<td>11 (24.4%)</td>
</tr>
</tbody>
</table>
Approximately 50% were predominantly spindle cell type, 25% predominantly giant cell type, and an adenocarcinoma component was present in 56% and a squamous carcinoma in 18%. The remainder showed a large cell carcinoma component.

Five-year survival and disease-free survival were 39 and 47% respectively. Histology did not have an effect on prognosis. Lymph node status (i.e. stage) adversely affected prognosis. Most recurrences were at distant sites and relatively early with half occurring within six months. Median survival after relapse was 2.6 months.

**Conclusions:** This tumor “should be considered to have a tremendously aggressive malignant behavior.”
III. REVIEWS (Many from Sem Diagn Path in August)


The title says it all. This review starts with growths followed by histopathology. There is a fairly detailed discussion of the various inclusions in the granulomas of sarcoidosis. Hamazaki-Wesenberg bodies are illustrated. Criteria for diagnosis on transbronchial biopsies are discussed. Extrapulmonary sarcoidosis, NSG, and lung transplantation for sarcoidosis are all discussed. There is a discussion on differential diagnosis that is basically a review of all things granulomatous. Finally, etiology and pathogenesis are discussed vis-a-vis recent immunologic advances.

Marboe CC. Pathology of Lung Transplantation. Seminars in Diagnostic Pathology. 2007;24:188.

Nice recent review with good illustrations, recent classifications, acute rejection, chronic airway rejection, chronic vascular infections, and other pathologies encountered in the graft (reperfusion injury, aspiration pneumonia, recurrent disease, hyperacute rejection, et al).


I think Dr. Moran, the editor of this issue, decided to include lesions that fell through the gaps in the other contributions. This manuscript includes inflammatory pseudotumor (the authors choose this term over inflammatory myofibroblastic tumor), placental transmogrification along with pulmonary alveolar microlithiasis and metastatic calcification.


Nice review that puts current pathologic diagnosis of NSIP into the context of current and previous pathologic classifications. Good illustrations.


Another in a series of review articles that keep turning up on IPF. This one basically reiterates the University of Michigan papers that have come out recently. It is a reasonably succinct discussion of diagnostic issues including pathology and radiology,
current issues in management, and followup. Figure 6 makes everything clear (see below).


This is part of a review series on translating basic research into clinical practice and the title is quite enticing. In the abstract, the authors say they focus on lung development and the pathogenesis of several diseases including COPD, CF and asthma. Most of the discussion is on COPD and some of the genes involved. The amount of discussion devoted to CF and asthma is considerably less.

The background hypothesis here is that there are genetic influences on these diseases or there are genetic susceptibilities for these diseases and these susceptibilities may be apparent as early as in utero.

“We suggest here that adverse environmental factors such as passive smoking or pollution from freeway traffic are not good for growing lungs...therefore, one of the simplest things we (parents and society) can do to reduce the burden of adult-onset lung disease is work to eliminate passive smoking either in utero or postnatally during early lung development, as well as active smoking by children and young persons.”

Comment: I think this is primarily a recitation of the senior author’s work in mouse models and does review the molecular development of the lung, but it is not a particularly encyclopedic article.

Stewart S. Pulmonary Infections in Transplantation Pathology. Archives of Pathology and Laboratory Medicine. 2007;131:1219.

This is a review of pulmonary infections in transplant pathology based on review of the literature complemented by the author’s extensive experience with lung transplantation. It is a fairly detailed review that does include an update of the recent literature in areas of fungal infections, particularly Aspergillus, CMV, other respiratory viruses, mycobacterial disease, and Pneumocystis jirovecii.

Wang CW, Colby TD. Histiocytic Lesions and Proliferations in the Lung. Seminars in Diagnostic Pathology. 2007;24:162.

This is a review of lesions that show prominent histiocytes histologically. It is essentially an atlas and not encyclopedic, but it does provide some review of the immunohistochemistry of histiocytes, neoplasms of (and mimicking) histiocytes, and a conceptual approach to histiocytic proliferations in the lung.
The lesions are divided as follows:

- Neoplasms of both histiocytes and dendritic cells
- Proliferative/inflammatory histiocytic lesions
  - Nodular aggregations
  - Diffuse proliferations
  - Mixed nodular and diffuse
- Histiocytic lesions of uncertain histogenesis

In addition to patterns of infiltration, qualitative features in the histiocytes: Dust filled, foamy, large lipid vacuoles, eosinophilic cytoplasm, Langerhans' morphology, epithelial morphology, necrosis, hemosiderin deposition, et al.

**IV. CASE REPORT**


Pigmented typical carcinoid tumors are well known. This report documents a pigmented atypical carcinoid tumor. The tumor had necrosis and 6 mitotic figures per 10 high power fields. Vascular and pleural invasion were present. The pigment was confirmed to be melanin and EM showed a few melanosomes in the tumor cells. The pigmented cells that were present in between the neoplastic cells were positive for S100 and HMB-45. These were interpreted as pigmented dendritic cells as have been reported in thymic carcinoid tumors, medullary thyroid carcinoma, and other rare tumors.