Diagnostic Dilemmas in WTC Obstructive Airways Disorders: A Role for Bronchiolitis?

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From my viewpoint, with 50 years as a pulmonologist with particular experience in normative standards, pfts, occupational and environmental lung disease and sarcoidosis, I present several cases of WTC airways disease followed at the Queens Center. Each makes a particular point, raises a critical question, or suggests the diagnosis of bronchiolitis.

QUEENS CLINICAL CENTER INTERNAL TREATMENT CLINICAL SERVICES
CODES: **LOWER RESPIRATORY**
Note: Grayed out boxes indicate codes not yet on the federal list of approved codes.

PRIMARY LOWER RESPIRATORY Check all that apply			___	494.0	Bronchiectasis
ALVEOLAR DISEASE			___	494.1	Bronchiectasis acute
___	516.8	Alveolar, Other specified	___	496	Chronic airways obstruction not classified
ASTHMA/RADS			___	466.19	Bronchiolitis
___	493.81	Asthma, exercise induced	**INTERSTITIAL LUNG DISEASE**		
___	493.10	Asthma, intrinsic (late onset)	___	135	Sarcoidosis
___	493.11	Asthma, intrinsic w/status asthmaticus	___	517.8	Sarcoidosis, lung
___	493.12	Asthma intrinsic, w/acute exacerbation	___	277.89	Eosinophilic granuloma
___	493.20	Asthma, chronic obstructive, unspecified	___	518.3	Pulmonary eosinophilia
___	493.22	Asthma, chronic obstructive w/acute exacrb	___	516.0	Pulmonary alveolar proteinosis
___	493.90	Asthma, unspecified	___	516.3	Pulmonary fibrosis diffuse
___	493.82	Asthma, cough variant	___	515	Pulmonary fibrosis localized
___	493.00	RADS unspecified	___	501	Asbestosis
___	493.01	RADS w/status asthmaticus	___	502	Pneumoconiosis, silica/talc
___	493.02	RADS w/acute exacerbation	___	503	Pneumoconiosis, other inorganic dust
___	506.4	Other chronic respiratory fumes/vapors	___	504	Pneumonopathy, inhalation of other dust
___	519.11	Acute bronchospasm	___	505	Pneumoconiosis, unspecified
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)			___	516.8	Pneumonitis, lymphocytic
___	490	Bronchitis NOS	___	516.8	Pneumonitis, desquamative interstital
___	491.0	Bronchitis, simple chronic	___	516.8	Pneumonitis, usual interstitial
___	491.1	Bronchitis, mucopurulent, chronic	___	495.9	Pneumonitis hypersensitivity
___	491.20	Bronchitis, obstructive, chronic w/o exacerb	___	508.9	Respiratory conditions, unspecified agent
___	491.9	Bronchitis, chronic	___	V15.84	Hx, exposure to asbestos
___	491.21	COPD w/acute exacerb	**PLEURAL DISEASE**		
___	506.0	Bronchitis/Pneumonitis, fumes/vapors	___	511.0	Pleural calcium/fibrosis/plaques
___	491.8	Tracheitis chronic	___		
___	492.8	Emphysema, other	___		

Case 1: 47 M, Atopic Asthma.

- Atopic asthma onset 9 years after 9/11/01
  - Positive BD response
  - Variably decreased or normal FVC and FEV_1
  - Normal FEV_1/FVC
- Note typical findings for WTC “asthma” yet long interval from exposure
- High IgE (535), ++RAST confirm atopy and raise the question of delayed response to triggering event
- Similar cases, including many with minimal to negligible exposure, raise questions of **diagnosis** and **relationship to WTC**

Case 2: 53 M, Classic WTC non-atopic "asthma."

- Decreased or normal FVC and FEV_1 + BD associated with obstructive sleep apnea (OSA) and GERD
- Negative HRCT
- Normal DL, reduced FRC (63%) and RV (58%)
- Negative IgE and RAST and unresponsiveness to asthma therapy (including oral corticosteroid) raise question about diagnosis of asthma and suggest other airways disorder not associated with air trapping: bronchiolitis.

Case 3: 54 M, Progressive severe atopic asthma.

- Elevated expired nitric oxide (76). GERD, severe sinusitis and nasal polyposis.
- Progressive restrictive obstructive and diffusion impairments
- FVC initially normal -> 61%, 55%, 38%, 33% (1.64 L)
- FEV_1 normal-> 64% -> 54% , 33%, 22% (0.81)
- Now with decreased FEV1/FVC.
- TLC 64%
- DL 52% -> 31%
- IgE 162, ++ RAST.
- Normal PA pressure.
- Normal HRCT.
- Progression on asthma Rx raises question of superimposed process.

Case 4: 47 M, Progressive dyspnea, absent pulmonary findings.

- OSA, GERD, Barrett's.
- CT Normal -> mosaic.
- Normal pfts, eNO, methacholine, transbronchial biopsy.
- Mosaic CT and negative TB bx. suggest bronchiolitis.

Case 5: 39 F, Persistent dyspnea and multiple hospitalizations for "asthma"

- Repeated hospitalizations resulting in compensation from several programs for total disability
- Repeated PFTs, bronchoprovocation, HRCT Normal
- Patient demanded open lung biopsy and arranged it on her own, against Clinic advice.
- "Minimal changes…mild respiratory bronchiolitis characterized by a few lightly pigmented macrophages within small bronchioles and peribronchiolar airspaces…usually an incidental finding of no clinical significance." *Is this a clinical disease?*

Case 6: 49 M, Ex-smoker

- No respiratory symptoms
- Normal PFTs, BP, IgE, RAST
- CT: moderate emphysema
- Is this clinical emphysema (COPD)?
- Is this a WTC-related disease?

Case 7: 49 M, Ex-smoker

- 2 year dyspnea
- Normal PFTs, BP, IgE, RAST
- CT: moderate emphysema
- Is this clinical emphysema (COPD)?
- Is this a WTC-related disease?