

Biological Terrorism

HARRT 2004

Anthrax (Inhalational) *Bacillus anthracis*

- **Early Symptoms/Signs**
 - Fever, Malaise, Fatigue, Chills, Myalgia
 - Cough
- **Delayed Symptoms/Signs**
 - Stridor
 - Dyspnea
 - Pleural Effusions
 - Respiratory Distress
 - Chest Pain
 - Edema
 - Abdominal Pain - GI Type
- **Delayed Symptoms/Signs (continued)**
 - Meningitis (Hemorrhagic CSF in 50%)
 - Septic Shock
 - Painless Necrotic Ulcers with Black Base - Dermal Contact
- **Classic Symptoms/Signs**
 - WIDENED MEDIASTINUM



Anthrax (Inhalational) *Bacillus anthracis*

- Bioterrorism Mode of Dissemination: Aerosol, (Cutaneous?)
- Incubation Period: 1- 6d (usually within 48h)
- Duration of Illness: Days
- Lethality: High (80-90%)
- Transmissibility: Low (cutaneous Anthrax only)



Fig 22-2 Scanning electron micrograph of germination of Bacillus anthracis spores. Numerous rod-shaped spores are present among the rod-shaped spores. Original magnification x 200. Photograph: Courtesy of John Landry, PhD, US Army Medical Research Institute of Infectious Diseases, Fort Detrick, Frederick, MD.

Flu vs. Anthrax (low risk population)

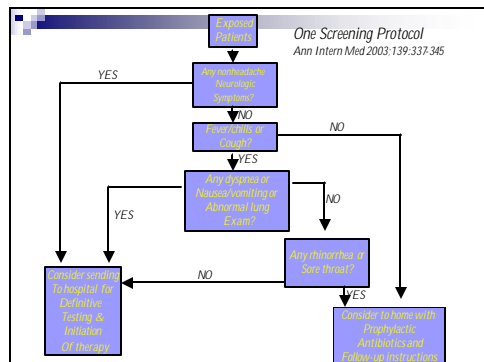
(MMWR 2001; 50(44):984-986)

- Nasal congestion/rhinorrhea: Think flu, not anthrax
- CXR abnormal? - Consider CT to r/o mediastinal pathology
- Dyspnea, chest discomfort, pleuritic pain: Think anthrax
- Rapid flu tests: Not helpful.

Mass Screening for Inhalational Anthrax: Lessons Learned

Ann Intern Med 2003; 139:337-345

- Sources: 28 cases of inhalational anthrax (1920-2001); 2762 cases of influenza & 1532 cases of noninfluenza viral resp. disease
- Results:
 - Fever/cough don't discriminate
 - Anthrax:
 - Nonheadache neurologic sx (LOC, confusion, blurred vision, dizziness)
 - Dyspnea
 - Nausea or vomiting
 - Abnormal lung sounds
 - Viral resp. tract infection:
 - Rhinorrhea
 - Sore throat



10 confirmed/suspected inhalational anthrax cases

(MMWR 2001; 50(43):941-948)

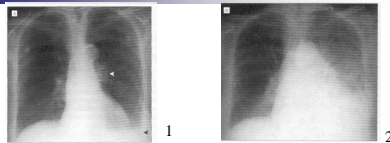
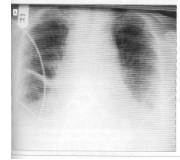
- Median age: 56 yr.
- Age range: 43-73 yr.
- Sex: 7 males
- I.P.: 7d (range: 5-11d)
- Fever: 9
- Sweats/chills: 6
- Malaise: 8
- Cough: 9
- Chest discomfort/pleuritic pain: 8
- Abdominal pain, N&V: 5
- Dyspnea: 7
- Headache: 5
- Myalgias: 4
- Sore throat: 2



- WBC: WNL/slight increase
- CXR/CT: Pleural effusions (7), infiltrates (7), mediastinal lymphadenopathy

Inhalational anthrax case report

- 61 year old female
 - Oct. 25: Malaise, myalgias
 - Oct. 26-27: Dyspnea, chest discomfort, productive cough, bloody sputum
 - October 28: To ER in respiratory distress; fever, widened mediastinum and bilateral pleural effusions on CXR
 - Oct. 31: Death
 - MMWR 2001: 50 (43); 941-8.



The Connecticut Case



Cutaneous anthrax case review (11)

(MMWR 2001; 50(43):941-948)

- I.P.: 5d (Range: 1-10d)
- Location: Forearm, neck, chest, fingers
- Progression: Papule → vesicle → ulcer → black eschar
- Painless with tingling or pruritic sensation
- Lethality (historically): <20%

7 month old New Yorker with microangiopathic hemolytic anemia, thrombocytopenia, renal insufficiency



Cutaneous anthrax case report

- 34 year old male
 - Oct. 12-15: Handling mail
 - Oct. 19: Small, erythematous, pruritic papule on left forearm
 - Oct. 19-20: Vesicle
 - Oct. 22-25: Increasingly larger eschar with erythema, edema, and induration

