

Final anatomical diagnosis :

1. Centrilobular emphysema, advanced.
2. Old tuberculous granuloma, upper lobe of left lung.
3. Small cell carcinoma of the left lung with metastasis to hilar lymph nodes and invasion into the trachea.
4. Pulmonary emboli.
5. Aspiration pneumonia, mild and focal.
6. Diffuse alveolar damage, focal.
7. Atherosclerosis, aorta and coronary arteries.
8. Left ventricular hypertension, heart.
9. Arteriolar nephrosclerosis.
10. Duodenal ulcer.
11. Congestion, liver, kidneys, and urinary bladder.
12. Atrophy, bilateral testes.

Clinical summary :

An 85-year-old male patient was admitted of the G-I ward on August 23, 1995 because of bloody stool for one week. He has a history of head injury with subdural hematoma and left hemiparesis since 1988. No hypertension nor diabetes mellitus was noted.

In the G-I ward, endoscopy revealed gastric atrophy and duodenal ulcer, CBC data showed mild anemia and leucocytosis. (WBC : 16,900 , RBC : 4.49 , HGB : 16.8 GM% , HCT : 39.9% , Segment : 93%). The sigmoidoscopy showed internal hemorrhoids.

Meanwhile, cough with yellowish sputum and electrolytes imbalance (Na : 124 , K : 3.5) were also noted. X-ray revealed a calcified nodule in the left upper lobe and bilateral infiltration consistent with pneumonia. Under the impression of old tuberculous granuloma and aspiration pneumonia. He was transferred to the chest ward. Later bleeding of hemorrhoids stopped. But progressive shortness of breath. Pleural effusion and respiratory distress developed. Although antibiotics and supportive treatment were given. The patient was intubated and put on the ventilator on October 7. Metabolic alkalosis (PH : 7.438 , PCO₂ : 31.7 , PO₂ : 68.7 , HCO₃ : 24.6) , Hypokalemia (K : 2.9) and Hyponatremia (Na : 131) were noted. Blood culture did not grow any bacteria.

Two dimension cardiac echogram showed pericardial effusion and possible cardiac tamponade. Surgeon was consulted and emergency subxiphoid drainage of 175 C.C. of serosanguineous effusion was performed and a biopsy of the pericardium was taken (S95-63952). No specific pathological finding was observed.

However, he suffered from progressive hypotension (47/26) and expired on October 21, 1995.

Autopsy findings :

(1) Body and external appearance :

Development	Well development
Nutritional state	Moderately nourished
A previous operation scar measuring 1 CM is seen along the left inguinal region.	

(2) Body cavities :

Right	Serous effusion 1300 C.C.
Left	Serous sanguineous effusion 1300 C.C.
Peritoneal	Ascites 400 C.C. Serous fluid
Pericardial	230 C.C. Serous fluid

(3) Cardiovascular system :

Greater vascular structures	
Gross	The entire aorta shows mild to focally severe atherosclerosis.
Microscopic Diagnosis	Marked atherosclerosis.

Heart General :			
Weight	430 GM	Pulmonary valve	5.5 CM
Left ventricle	1.8 CM	Mitral valve	6.0 CM
Right ventricle	1.3 CM	Aortic valve	4.5 CM
Tricuspid valve	7.0 CM		

Heart	Gross	Microscopic Diagnosis
Valves	Unremarkable	Unremarkable
Epicardium	Unremarkable	Unremarkable
Myocardium	Hypertrophy of left ventricle	
Endocardium	Unremarkable	Unremarkable
Coronary arteries	Marked atherosclerosis with hardening and narrowing	Fibrosis, sclerosis and narrowing

(4) Respiratory system :

Trachea and major bronchi		
Gross	Contents	NIL
	Mucosa	Ulcer
	A tumor mass of 7 x 6 x 5.5 CM is attached to the left side of the trachea at the hilum.	
Microscopic Diagnosis	The tumor is a small cell carcinoma with under the mucosa. Necrosis is extensive.	

Lung		
Weight	Right	650 GM
	Left	680 GM
Gross	A fibrotic nodule measuring 2.0 x 2.0 x 0.5 CM is seen in the peripheral portion of the left upper lobe. A necrotic nodule of 2.5 x 2.5 x 2.5 CM with caseous necrosis is seen in left upper apical portion. Both lungs show marked centrilobular emphysema.	
Microscopic Diagnosis	The upper nodule shows caseous necrosis with calcification. No acid fast bacilli are found. The peripheral fibrotic nodule is a scar with small cell carcinoma and necrosis. The tumor is seen in the lymphatics spreading to the hilum. Both lungs show focal foreign body granulomas, focal diffuse alveolar damage, interstitial fibrosis, and distal portion. Hilar lymph nodes contain metastatic small cell carcinoma.	

(5) Gastrointestinal Tract :

Gastrointestinal Tract	Gross	Microscopic Diagnosis
Esophagus	Unremarkable	Unremarkable
Stomach	Unremarkable	Unremarkable
Duodenum	A ulcer measuring 1.5 x 1.5 CM at antrum	A shallow ulcer

Gastrointestinal Tract	Gross	Microscopic Diagnosis
Small bowel	Unremarkable	Unremarkable
Large bowel	Unremarkable	Unremarkable
Cecum and appendix	Unremarkable	Unremarkable
Appendix	Weight : 65GM	Unremarkable
	Size : 20 x 4.5 x 1.8 CM	

(6) Hepatobiliary system :

Liver		
Gross	Weight	780 GM
	Size	19 x 10 x 10 CM
	Outer surface	Smooth
	Cut surface	No tumor nor abscess
Microscopic Diagnosis	Wild focal congestion and groups of ground glass hepatocytes.	

Gallbladder, Bile ducts	Gross	Microscopic Diagnosis
	Unremarkable	Unremarkable

(7) Hematopoietic-Lymphoid system :

Spleen		
Gross	Weight	86 GM
	Size	3.0 x 6.0 x 3.0 CM
Microscopic Diagnosis	Congestion	

(8) Urogenital system :

Kidney						
Gross	Right	Weight	110 GM	Left	Weight	110 GM
		Size	9.5 x 4.5 x 3.2CM		Size	9.0 x 4.0 x 3.5 CM
	Bilateral kidneys are grossly unremarkable but renal arteries show moderate atherosclerotic change.					
Microscopic Diagnosis	There are scattered sclerosed glomeruli and arteriosclerosis. Also congestion is seen.					

Prostate/Testes						
Gross	Right	Weight	18.4 GM	Left	Weight	16 GM
		Size	4.5 x 3.0 x 1.0 CM		Size	4.3 x 2.5 x 1.2 CM
	No tumor is seen					
Microscopic Diagnosis	Nodular hyperplasia of the prostate. Both testes show hyalinized tubules and thickened basement membrane.					

Urogenital system	Gross	Microscopic Diagnosis
Ureters	Unremarkable	Unremarkable
Bladder and urethra	Congestion	Congestion and edema

(9) Endocrine system :

Thyroid						
Gross	Right	Weight	12.5 GM	Left	Weight	13 GM
		Size	6.0 x 2.5 x 2.0 CM		Size	6.2 x 2.8 x 2.5 CM
	Unremarkable					
Microscopic Diagnosis	Unremarkable					

Adrenals						
Gross	Right	Weight	5.5 GM	Left	Weight	4.5 GM
		Size	5.0 x 2.0 x 2.0 CM		Size	4.0 x 2.0 x 2.0 CM
Microscopic Diagnosis	Unremarkable					

Endocrine system	Gross	Microscopic Diagnosis
Parathyroids	Unremarkable	Unremarkable

(10) Central nervous system :

Not included.

Section Taken and Labeled as :

Labeled	Section Taken
LT1-2	Left superior lobe (old TB nodule)
'X4	(Apicoposterior or segment)
LT3-4	Left superior lobe (Tumor)
'XL1-3	(Anterior segment)
'XL5	
LT5-6	Left inferior lobe
'X6	
X12	Left (lobar) lymph node
X1	Upper paratracheal lymph node
X5	Aortopulmonary lymph node
X6	Anterior mediastinal lymph node
X10	Left tracheobronchial lymph node
X71-72	Subcarinal lymph node
HM1-3	Paratracheal tumor
T1-5	Tumor between aorta and pulmonary artery

Labeled	Section Taken
RLA	Right larynx
LLA	Left larynx
TR	Trachea
RPA	Right pulmonary artery
RL 1-2	Right upper lobe
RL 3-4	Right middle lobe
RL 5-6	Right lower lobe
RLN 1-3	Right (lobar) lymph node
HRC	Right coronary artery
HAD	Left coronary artery, anterior interventricular branch
HLC	Left coronary artery, circumflex branch
HCS	Coronary sinus
HA	Aorta
AA 1	Brachiocephalic trunk
AA 2	Common carotid artery
AA 3	Left subclavian artery
AA 4-7	
HR 1-2	Right heart, tricuspid valve
HR 3	Right heart, pulmonary valve
HL 1-2	Left heart, mitral valve
HL 3-4	Left heart, aortic valve
HS	Interventricular septum, muscular part
ESO	Esophagus
EG	E-G Junction
ST 1	Stomach
ST 2-3	Duodenal ulcer

Labeled	Section Taken
DUO	Duodenum
AMV	Ampulla of Vater
SIN	Small intestine (Ileum)
APP	Appendix
LIN	Large intestine
REC	Rectum
PA 1-2	Pancreas
SP 1-2	Spleen
LV 1-2	Liver
LV 3	Liver and gallbladder
BL 1-2	Urinary bladder
RK 1-2	Right kidney
LK 1-2	Left kidney
RAD	Right adrenal gland
LAD	Left adrenal gland
DA	Descending aorta
PRO	Prostate
LSV	Left seminal vesicle
RTE	Right testis
LTE	Left testis
RTH 1-2	Right thyroid
LTH 1-2	Left thyroid
RPTH	Right parathyroid
LPTH	Left parathyroid
BM	Vertebra, blood marrow

Final Comments :

The patient had advanced centrilobular emphysema and an old tuberculous granuloma in left upper lung. A small cell carcinoma arising from a subpleural scar was found in left upper lobe with metastasis to the hilar lymph nodes and invasion into tracheal mucosa. The Rest of the lungs had pulmonary emboli, aspiration pneumonia and focal diffuse alveolar damage. The patient appeared to die of the respiratory disease.