

Date : 2016/05/26

Final anatomic diagnosis :

1. Diffuse large B cell lymphoma of activated B-cell type, involving nodal and extranodal sites including bone marrow, liver, spleen, lungs, kidneys, adrenal glands, urinary bladder, myometrium, mesovarium, and mesosalpinx.
2. Diffuse alveolar damage and pulmonary edema.
3. Hepatomegaly and cholestasis.
4. Splenomegaly.
5. Nephrolithiasis of right kidney.
6. Atherosclerosis.

Clinical summary :

The 63-year-old female, with past history of hypertension, came to our hospital on March 26th, 2016 due to intermittent fever for 1 month. The associated symptoms are general weakness, poor appetite, and intermittent chest tightness. She had no productive cough, nor recent weight loss. She had no recent contact or travel history. The physical examinations showed no remarkable findings. The initial laboratory examinations showed microcytic anemia, thrombocytopenia and elevated CRP level (163.7 mg/L).

After admission, ceftriaxone and azithromycin were prescribed. Thrombocytopenia and microcytic anemia still persisted. Abdominal ultrasonography revealed splenomegaly on March 31st, and pancytopenia was noted since April. Bone marrow study was then performed. Laboratory studies for autoimmune markers, CMV and EBV were also performed and showed no remarkable findings. Doxycycline was added on April 1st, and levofloxacin was given since April 2nd. Hydrocortisone was also used for suspicion of autoimmune disease or tumor fever. However, intermittent fever still persisted. Galium-67 scan was arranged on April 11th and pneumonitis was suspected. Then HRCT of lung was arranged on April 13th and showed no evidence of interstitial lung disease. PEP/ IFE showed monoclonal gammopathy of uncertain significance, so serum FLC, IgM and serum viscosity were checked and showed no significant findings. Serum MPO/PR3 also showed negative findings. Anti-tuberculosis agents, Rifater and Ethambutol, were added on April 15th for suspicious Mycobacterial infection. Repeated abdominal ultrasonography on April 18th revealed hepatosplenomegaly, and liver biopsy was considered then.

The patient began to have progressive dyspnea since April 21st. Electrocardiography showed sinus tachycardia, and chest plain films showed no significant pulmonary infiltration or pleural effusion. Hematologists are consulted again and lymphoma was suspected, and then dexamethasone was used. Liver biopsy was suggested, but was refused. The patient began to have dropped blood pressure and severe dyspnea on April 25th. Eventually she was found apnea and asystole, and died on April 26th.

Autopsy findings :

(1) Body and external appearance :

Height	162 CM
Development	Fair
Nutritional state	Fair
There are several skin rashes over face, neck and anterior chest.	

(2) Body cavities :

Pleural	55 C.C. Serosanguineous
Pericardial	2 C.C. Serosanguineous

(3) Cardiovascular system :

Greater vascular structures	
Gross	Atherosclerotic plaques are seen in aortic wall
Microscopic Diagnosis	Atherosclerosis

Heart General :		
Right	atrium	5.0 x 4.5 x 4.0 CM
	ventricle	6.5 x 5.0 x 3.0 CM
Left	atrium	3.5 x 3.0 x 2.5 CM
	ventricle	5.0 x 3.5 x 3.5 CM

Cardiovascular system	Gross	Microscopic Diagnosis
Valves	No remarkable finding	
Epicardium	No remarkable finding	No pathological diagnosis
Myocardium	No remarkable finding	No pathological diagnosis
Endocardium	No remarkable finding	No pathological diagnosis
Coronary arteries	No remarkable finding	

(4) Respiratory system :

Trachea and major bronchi	
Contents	No
Mucosa	No remarkable finding

Lung		
Weight	Right	760.2 GM
	Left	670.5 GM
Size	Right	Upper lobe 12.5 x 12.0 x 8.5 CM
		Middle lobe 11.5 x 8.5 x 3.2 CM
		Lower lobe 15.5 x 8.3 x 8.2 CM
	Left	Left upper lobe 18.0 x 10.0 x 6.5 CM
		Left lower lobe 14.0 x 9.5 x 8.5 CM
Gross	No remarkable finding	
Microscopic Diagnosis	There are marked interstitial and alveolar infiltrations of atypical lymphocytes in bilateral lungs. These atypical lymphocytes have medium-size and pleomorphic nuclei.	
	Focal pulmonary edema	
	Focal hyaline membranes along the alveolar walls	

Mediastinum	
Thymus	Not found

(5) Gastrointestinal Tract :

Gastrointestinal Tract	Gross	Microscopic Diagnosis
Pharynx	No grossly remarkable finding	No pathological diagnosis
Esophagus	Size 27.3 CM	Autolysis of mucosa
	No grossly remarkable finding	

Gastrointestinal Tract	Gross	Microscopic Diagnosis
Stomach	Greater curvature : 25 CM	Autolysis of mucosa
	Lesser curvature : 19.9CM	
Small bowel	527.0 CM in length	Autolysis of mucosa
Large bowel	113.0 CM in length	Autolysis of mucosa
Cecum and appendix : Appendix	5.3 CM in length,	Fibrous obliteration
	0.2CM in diameter	
	No grossly remarkable finding	
Pancreas	7.5 x 4.5 x 1.5 CM	Autolysis

(6) Hepatobiliary system :

Liver		
Gross	Weight	2390 GM
	Size	25.0 x 20.5 x 10.5 CM
	Out surface	Smooth
	Cut surface	Nutmeg-like appearance
Microscopic Diagnosis	The sinusoids show diffuse and marked dilatation, with marked periportal and sinusoidal infiltrations of atypical lymphocytes. These lymphocytes have medium-size and pleomorphic nuclei.	
	Focal cholestasis	

Gallbladder, Bile ducts		
Gross	8.2 x 3.2 x 2.8 CM	
	Wall : 0.5 CM in thickness	
Microscopic Diagnosis	Autolysis of mucosa	

(7) Hematopoietic-Lymphoid system :

Spleen				
Gross	Weight	1205 GM	Size	20.0 x 16.5 x 8.8 CM
	Congestion, soft and friable			
Microscopic Diagnosis	There are marked infiltrations of atypical lymphocytes in red pulp and white pulp. These lymphocytes have medium-sized and pleomorphic nuclei.			

Bone marrow	
Gross	No grossly remarkable finding
Microscopic Diagnosis	The marrow spaces are occupied by atypical lymphocytes which have medium-sized and pleomorphic nuclei.

(8) Urogenital system :

Kidney		
Weight	Right	300 GM
	Left	250 GM
Size	Right	8.7 x 6.9 x 3.5 CM
	Left	10.0 x 5.2 x 4.0 CM
Gross	There is a dark-brown stone measuring 2.2 x 1.0 x 0.9 CM in the pelvis right kidney.	
Microscopic Diagnosis	There are scattered small foci of infiltrations of atypical lymphocytes, which have medium-sized and pleomorphic nuclei.	

Bladder and urethra		
Gross	Bladder	7.5 x 6.0 x 2.0 CM
	Right ureter	12.2 x 0.2 x 0.1 CM
	Left ureter	10.7 x 0.2 x 0.2 CM
Microscopic Diagnosis	There are scattered foci of atypical lymphocytes infiltrations in the urinary bladder. The atypical lymphocytes have medium-sized and pleomorphic nuclei.	

Genital organs	Gross	Microscopic Diagnosis
Uterus	6.5 x 5.0 x 2.1 CM	There are scattered small foci of atypical lymphocytes infiltrations in myometrium, bilateral mesovarium and bilateral mesosalpinx. The atypical lymphocytes have medium-sized and pleomorphic nuclei.
Cervix	2.5 x 2.4 x 1.2 CM	
Right adnexa	Ovary : 1.7 x 0.5 x 0.4 CM	
	Fallopian : 7.1 x 0.4 x 0.3 CM	
Left adnexa	Ovary : 1.5 x 0.5 x 0.5 CM	
	Fallopian : 5.5 x 0.3 x 0.2 CM	

(9) Endocrine system :

Thyroid	
Gross	Size : 6.0 x 4.6 x 2.0 CM Weight : 16.45 GM
	No grossly remarkable finding
Microscopic Diagnosis	A small hyperplastic nodule is seen in the right thyroid gland.

Adrenals glands	
Gross	Left : 4.3 x 2.0 x 0.2 CM
	Right : 3.5 x 3.3 x 0.6 CM
Microscopic Diagnosis	There are scattered foci of infiltrations of atypical lymphocytes, which have medium-sized and pleomorphic nuclei.

Section Taken and Labeled as :

Labeled	Section Taken	Labeled	Section Taken
RA	Right atrium, heart	S1-8	Spleen (缺蠟塊 S4)
LA	Left atrium, heart	RK1	Right kidney
RV	Right ventricle, heart	RK2	Right adrenal gland and right ureter
LV	Left ventricle, heart	LK1	Left kidney
RUL	Right upper lobe, lung	LK2	Left adrenal gland and left ureter
RML	Right middle lobe, lung	UB	Urinary bladder
RLL	Right lower lobe, lung	U1-2	Uterus
LUL	Left upper lobe, lung	RAD	Right adenxa
LLL	Left lower lobe, lung	LAD	Left adenxa
AET	Aorta, esophagus and trachea	SK1-2	Skin
LI	Large intestine	B1-2	Clavicle
GI	Stomach and small intestine	RTH	Right thyroid gland
AP	Appendix	LTH	Left thyroid gland
P	Pancreas	LN1-6	Lymph nodes, para-aortic
GB	Gallbladder	LN7	Lymph nodes, lower neck
L1-8	Liver, according to segmentation (缺蠟塊 L3)		
LN8-9	Lymph nodes, mediastinum (缺蠟塊 LN8)		
LN10	Lymph nodes, greater curvature of stomach		
X1	Kidney	X2	Ureter
X3	Skeletal	X4	Adrenal gland
X5, 7, 8	Ovary	X6	Fallopian tube
X9, 12	Esophagus	X10	Urinary bladder
X11	Bone	X13	Trachea
X14	Gallbladder	X15	Liver
X16	Lymph node	X17	Lung
X18-19	Heart	X20	Spleen
X21	Large intestine	X22	Small intestine
X23	Stomach	X24	Fat
X25	Appendix	X26	Thyroid gland

Final Comments :

The microscopic findings show diffuse infiltrations of atypical lymphocytes in liver, spleen and lung, and scattered atypical lymphocytes infiltrations in bilateral kidneys, bilateral adrenal glands, urinary bladder, myometrium, bilateral mesovarium, and bilateral mesosalpinx. These atypical lymphocytes are also found in bone marrow spaces and para-aortic, mediastinal, and intra-abdominal lymph nodes. By immunohistochemical study, these atypical lymphocytes show exclusive expression of CD 20 and are negative for CD5 and CD3, which proved to be neoplastic B lymphocytes. Further immunohistochemical study showed that these neoplastic B lymphocytes are positive for MUM1 and Bcl-2 and negative for CD10, CD23, Bcl-6 and Cyclin D1. The Ki-67 proliferation index is about 60%. As a result, it is a diffuse large B cell lymphoma of activated B-cell type, involving nodal and many extranodal sites.