MULTIPLE ORGANS FAILURE IN AGED CHIMPANZE

History
Female Chimpanze from a local Zoo was submitted to laboratory of Veterinary Pathology IPB Bogor for necropsy on 11 June 2008. She was 67 years old. Before died she had complained of weakness, not able to stand, and only consumed fruit juices.

Pathology Findings
The result of pathology findings are summing up into table 1.

Table 1. The summing up of pathology findings in 64 years old, female chimpanze

<table>
<thead>
<tr>
<th>Organs</th>
<th>Long standing lesion</th>
<th>Lesion that still have acute stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart</td>
<td>Bilateral ventricular dilatation, mitral valves endocardiosis</td>
<td>Multiloculated chronic active myocardial necrosis</td>
</tr>
<tr>
<td>Blood</td>
<td>Atherosclerosis of thoracic and abdominal aorta, pulmonary and coronary arteries, obturating thrombi</td>
<td></td>
</tr>
<tr>
<td>Spleen</td>
<td>Chronic multinodular mineralized splenitis</td>
<td></td>
</tr>
<tr>
<td>Pleural cavity</td>
<td>Fluid pleural effusion, pleural adhesion tags</td>
<td></td>
</tr>
<tr>
<td>Lungs</td>
<td>Long standing anthracosis, chronic bronchopneumonia</td>
<td></td>
</tr>
<tr>
<td>Digestive tract</td>
<td>Broken left canine teeth and several of incision teeth were absent</td>
<td>Ulcerative gingivitis, mucous hemorrhagic gastro-enteritis, catarrhal colitis</td>
</tr>
<tr>
<td>Liver</td>
<td>Chronic hepatitis</td>
<td></td>
</tr>
<tr>
<td>Pancreas</td>
<td>Chronic pancreatitis</td>
<td></td>
</tr>
<tr>
<td>Kidneys</td>
<td>Chronic interstitial nephritis, right sided atrophy</td>
<td></td>
</tr>
<tr>
<td>Reproductive organs</td>
<td>Chronic endometritis</td>
<td></td>
</tr>
<tr>
<td>Brain</td>
<td>Chronic focal meningitis</td>
<td></td>
</tr>
<tr>
<td>Skin and mucous membrane</td>
<td>Healed wound on the back, few region of non symmetrical alopecia</td>
<td>Inner lips and conjunctiva: blanch</td>
</tr>
</tbody>
</table>

Figure 1. Pathological lesions in several organs: A. right sided atrophy of kidney, B. Chronic multinodular mineralized splenitis C. Atherosclerosis
MALIGNANT LYMPHOMA (PLASMA CELL NEOPLASM) IN A LONG-TAILED MACAQUE (Macaca fascicularis)

Jun Suzuki1, Akiko Kato1, Akihisa Kamoko1, Satoshi Takada2, Takakumi3
1Primate Research Institute, Kyoto University
2Inuyama, Aichi
3Graduate School of Science, University of Tokyo.
4Japan Bioscience Center, Inc., Japan

Keywords: long-tailed macaques, malignant lymphoma.

Introduction
Malignant lymphomas are common neoplasms in humans and non-human primates [1]. Analyses of CD markers also help us to classify lymphomas in non-human primates and provide more information about the lymphomagenesis [2]. The simian Epstein-Barr virus (sEBV) known as cercopithecine lymphoepithelioma virus is well known to play an important role in the oncogenesis in the macaques [3]. Recently, a long-tailed macaque kept in the Primate Research Institute of Kyoto University was found to have developed a malignant lymphoma and subsequently was euthanized. We here report the histopathological, virological and etiological data of the case.

Materials and Methods
The animal was a male long-tailed macaque aged 8 years. Immunohistochemistry staining of the paraffin-embedded tissues was performed using selected antibodies to human CD markers, which had been confirmed cross-reactive with Japanese macaque’s antigens. To confirm the presence of sEBV in tumor cells, in situ hybridization was performed using fluorescein-conjugated oligonucleotide complementary to portions of the sEBV-encoded early RNA transcripts (sEBER).

Results
Severe anemia (RBC 62 x 10^6/mm^3), hemoglobin 1.5 g/dl, and hematocrit 5.3 %, low platelet count (3.1 x 10^5/mm^3) and high CRP (5.6 mg/dl) were documented one day before death. Gross lesions were characterized by systemic swelling of various lymph nodes, a neoplastic mass along thoracic lymph duct and splenomegaly. Histopathological analyses revealed the presence of neoplastic cells classified into plasma cells. The plasmacytic neoplastic cells and relatively matured lymphocytes infiltrated into many organs including bone marrow, spleen, lymph node, and intestine.

Discussion
Histopathological findings
Histopathology of the heart were multifocal fibrosis around large blood vessels, accumulation of lipofuscin pigment in myocardial, and inflammatory reaction dominated by lymphocytes. A data shown thrombus, vascular intima, leakage of tunica intima, lymphoid infiltration and fibromyxoid degeneration. Microscopic changes of spleen showed capsule and trabecular strutures were intact, while the structure of lymphoid follicles were missing replaced by various size of lamellated protein deposition as hyaline and bright pink with HE staining. Others histopathological findings were describing aging response.

Discussion
The myocardial necrosis is partly due to ischemia that set up by deprivation of blood in the atherosclerotic coronary artery. The resultant coronaryopathy, joint by endocardiosis have lead bilateral cardiac dilatation. The obstructing thrombi in the atherosclerotic large arteries, chronic bronchopneumonia and pleural effusion contribute to tissue deprivation of oxygenated blood. The tissue hypoxia, in concert with chronically diseased major organs, confinement stress and self food restriction are causative factors to multiple organ failure.

Acknowledgement
We appreciate to The Medical Team of Ragunan Zoo, Jakarta for submitting of aging Chimpanzee carcass to our Laboratory for diagnostic.

References

Histopathological findings
Histopathology of the heart were multifocal fibrosis around large blood vessels, accumulation of lipofuscin pigment in myofibril, mild inflammatory reaction dominated by lymphocytes. A data shown thrombus, vasculitis, leakage of tunica intima, lymphoid infiltration and fibromyxoid degeneration. Microscopic changes of spleen shown capsule and trabecular strutures were intact, while the structure of lymphoid follicles were missing replaced by various size of lamellated protein deposition as hyaline and bright pink with HE staining. Others histopathological findings were describing aging response.