

Division of Diagnostic Pathology

Professor (Director)

Masashi Fukayama, M.D., Ph.D.*

Associate Professor (Deputy Director)

Junji Shibahara, M.D., Ph.D.*

Takeshi Sasaki, M.D., Ph.D. (Chief, Telepathology & Remote Diagnosis Promotion Center)

Associate Professor

Tetsuo Ushiku, M.D., Ph.D.*

Lecturer

Teppei Morikawa, M.D., Ph.D.,

Lecturer (Hospital)

Masako Ikemura, M.D., Ph.D. Aya Shinozaki-Ushiku, M.D., Ph.D. *

Associate

Yukako Shintani, M.D., Ph.D. Hiroyuki Abe, M.D., Ph.D.,

Akimasa Hayashi, M.D., Ph.D.,

Shogo Tajima, M.D. * Mariko Tanaka, M.D., Ph.D. *

Clinical Fellow

Makiko Ogawa, M.D., Kei Oide, M.D., Ryohei Kuroda, M.D.

Homepage <http://pathol.umin.ac.jp/>

Introduction and Organization

Department of Pathology and Diagnostic Pathology (*) and Division of Diagnostic Pathology of University Hospital have been organized to function as a unit.

The proper staffs in the Division of Diagnostic Pathology include a lecturer, five associates, and three clinical staffs. Dr. Shintani learned cardiovascular pathology in Massachusetts General Hospital from 11, Nov. to 12, Dec.

We set up Telepathology & Remote Diagnosis Promotion Center (TRDP Center), and also started Outpatient Clinic of Pathology, and Dr. Sasaki explained the detail of cancer pathology to the patients with breast cancer.

To promote the application of development of genomic medicine to clinical practice, we set up Center for Genome Pathology Standardization (Tailor-made Medical Treatment Program, funded by Ministry of Education, Culture, Sports, Science, and Technology) (<http://genome-project.jp/>). The mission of the Center is to investigate basic technologies for tissue banking, and to hold seminars for doctors and technicians. We held the first seminar on March 28-29, 2015.

Clinical activities (diagnostic pathology and autopsy)

The annual statistics of the pathological practice in 2014 fiscal year consisted of 16,581 cases of histological

examination (22,951 specimens), 18,851 cases of cytology, 826 of frozen histology, 464 of intra-operative cytology, 61 cases of autopsy (17.9% of the autopsy rate), and 1 autopsy case from other hospitals.

The following surgical pathology conferences are regularly held with each clinical division for the cases of various tumors of organs; thoracic organs (Dr. Shinozaki-Ushiku in charge), liver and pancreato-biliary tract (Drs. Shibahara and Tanaka), male genitourinary (Dr. Morikawa) and female genital tracts (Dr. Sasaki), breast (Dr. Ikemura), and bone and soft tissues (Dr. Ushiku). Biopsy conferences are also held in the cases of kidney (Dr. Shintani in charge), skin (Dr. Shinozaki-Ushiku) and GI tract (Dr. Abe).

Our aim in the pathologic practices is to provide the correct diagnosis as soon as possible. We are addressing ‘one-day pathology’ using a rapid-histoprocessing machinery. We also perform double check for reviewing the reports and slides for all cases of histological examination to prevent a potential misdiagnosis.

Virtual slide scanners have been installed, which enabled us to deposit the biopsy specimens as digital information. We are setting out a future providing system of pathologic images for clinical divisions.

We hold autopsy case conferences on every Monday. Hospital clinico-pathological conferences (CPC) is also held every month as mentioned above, and two cases are discussed in each CPC. The contents are provided as CPC Digest by the hospital internet.

We continue to participate in the autopsy assessment for “The Model Project for Inspection and Analysis of the Deaths Related to Medical Treatment (DRMT)”.

Teaching activities

The lectures and exercise course of systemic pathology are for the 2nd grade–students. Clinical Clerkship (CC) courses of autopsy and surgical pathology are for the 4th grade students. Six students of 3rd grade took the elective clinical clerkship course.

We instructed all clinical residents (junior course) to submit a report of CPC case as an obligatory requirement of their medical training for each of them.

We have made out the digest version of CPC slides open in the hospital (Drs. Shintani and Hayashi), and also started e-learning program for interns to solve the problems in CPC by themselves, thereby facilitating their understanding (Dr. Ikemura).

The Division of Diagnostic Pathology received nine junior residents (total 32 months) in 2014 for their second year program of the internship.

Research activities

Dr. Sasaki is in charge of the research to evaluate feasibility of telepathology for daily practice of diagnostic pathology.

We continue the study to investigate the usefulness of post mortem CT images for hospital autopsy (Drs. Shintani and Abe). We obtain postmortem images with a CT apparatus in the autopsy-assisting CT room, and compare the results with those of autopsy in order to understand the patients’ pathophysiology (Ref.9, 24, 25 in Department of Pathology and Diagnostic Pathology).

We continue the pathological studies of neoplastic diseases on the basis of surgical pathology conferences (see the pages of Department of Pathology and Diagnostic Pathology). We are also developing diagnostic and therapeutic methods using cancer specific antibodies in collaboration with Departments of Radiology and Upper GI tract Surgery, and Genome Science Division, Research Center for Advanced Science and Technology, the University of Tokyo (Drs. Ikemura, Ushiku, and Abe). We also cooperate with projects developing PET and in vivo imaging of cancers with Departments of Upper GI tract Surgery and Hepato-biliary & Pancreas Surgery.

References (Case Reports Only)

See the corresponding section of Department of Pathology and Diagnostic Pathology

- (1) Furuta T, Kiryu S, Yamada H, Hosoi M, Kurokawa M, Morikawa T, Shibahara J, Ohtomo K. Erdheim-Chester disease with an 18F-fluorodeoxyglucose-avid breast mass and BRAF V600E mutation. *Jpn J Radiol.* 2014 May; 32(5): 282-7.
- (2) Hangai S, Yoshimi A, Hosoi A, Matsusaka K, Ichikawa M, Fukayama M, Kurokawa M. An

- indeterminate result of QuantiFERON- TB Gold In-Tube for military tuberculosis due to a high level of IFN- γ production. *Int J Hematol.* 2014 Apr;99(4):523-6.
- (3) Harada N, Ishizawa T, Inoue Y, Aoki T, Sakamoto Y, Hasegawa K, Sugawara Y, Tanaka M, Fukayama M, Kokudo N. Acoustic radiation force impulse imaging of the pancreas for estimation of pathologic fibrosis and risk of postoperative pancreatic fistula. *J Am Coll Surg.* 2014 Nov ; 219(5):887-94.e5.
- (4) Harada S, Yamazaki S, Nakamura F, Morita K, Yoshimi A, Shinozaki-Ushiku A, Fukayama M, Kurokawa M. Autoimmune neutropenia preceding *Helicobacter pylori*-negative MALT lymphoma with nodal dissemination. *Int J Clin Exp Pathol.* 2014 Aug; 7(9):6386-90.
- (5) Honda A, Nakamura F, Nannya Y, Shintani Y, Fukayama M, Ichikawa M, Kurokawa M. Pulmonary lymphocyte-rich classical Hodgkin lymphoma with early response to ABVD therapy. *Ann Hematol.* 2014 Jun; 93(6):1073-4.
- (6) Ikemura M, Maeda E, Hatao F, Aikou S, Seto Y, Fukayama M. Plexiform angio- myxoid myofibroblastic tumor (PAMT) of the stomach. A case report focusing on its characteristic growth pattern. *Int J Clin Exp Pathol.* 2014 Jan; 7(2): 685-9.
- (7) Inoue T, Oda K, Arimoto T, Samejima T, Takazawa Y, Maeda D, Fukayama M, Kawana K, Osuga Y, Fujii T. Xanthogranulomatous inflammation of the perimetrium with infiltration into the uterine myometrium in a postmenopausal woman: a case report. *BMC Womens Health.* 2014 Jul 15;14:82.
- (8) Kobayashi T, Seo S, Morita S, Goto A, Masuda A, Shimizu N, Nishida M, Nunobe S, Ichikawa M, Takazawa Y, Seto Y, Fukayama M, Kurokawa M. Esophageal intramucosal hematoma after peripheral blood stem cell transplantation: case report and review of literature. *Int J Clin Exp Pathol.* 2014 Apr 15;7(5):2690-4.
- (9) Kogure Y, Nakamura F, Shinozaki-Ushiku A, Watanabe A, Kamei K, Yoshizato T, Nannya Y, Fukayama M, Kurokawa M. Pulmonary mucormycosis with embolism: two autopsied cases of acute myeloid leukemia. *Int J Clin Exp Pathol.* 2014 May; 7(6):3449-53.
- (10) Kume A, Morikawa T, Ogawa M, Yamashita A, Yamaguchi S, Fukayama M. Congenital neuroblastoma with placental involvement. *Int J Clin Exp Pathol.* 2014 Oct; 7(11):8198-204.
- (11) Makise N, Morikawa T, Takeshima Y, Homma Y, Fukayama M. A case of urinary bladder urothelial carcinoma with squamous, glandular, and plasmacytoid differentiation. *Case Rep Oncol.* 2014 May; 7(2):362-8.
- (12) Mine S, Suzuki K, Sato Y, Fukumoto H, Kataoka M, Inoue N, Ohbayashi C, Hasegawa H, Sata T, Fukayama M, Katano H. Evidence for human herpesvirus-6B infection of regulatory T-cells in acute systemic lymphadenitis in an immunocompetent adult with the drug reaction with eosinophilia and systemic symptoms syndrome: a case report. *J Clin Virol.* 2014 Nov; 61(3):448-52.
- (13) Mukaiyama Y, Suzuki M, Morikawa T, Mori Y, Takeshima Y, Fujimura T, Fukuhara H, Nakagawa T, Nishimatsu H, Kume H, Homma Y. Multiple primary malignant neoplasms of the glottis, renal pelvis, urinary bladder, oral floor, prostate, and esophagus in a Japanese male patient: a case report. *World J Surg Oncol.* 2014 Sep; 12:294.
- (14) Nakaya T, Morita K, Kurata A, Ushiku T, Igarashi T, Kuroda M, Fukayama M. Multifocal kaposiform hemangio- endothelioma in multiple visceral organs: an autopsy of 9-day-old female baby. *Hum Pathol.* 2014 Aug; 45(8):1773-7.
- (15) Numakura S, Morikawa T, Ushiku T, Toyoshima T, Fukayama M. Langerhans cell histiocytosis of the urinary bladder in a patient with bladder cancer previously treated with intravesical Bacillus Calmette-Guérin therapy. *Pathol Res Pract.* 2014 Feb;210(2):123-6.
- (16) Nozawa H, Kanazawa T, Tanaka T, Takahashi M, Ishihara S, Sunami E, Kitayama J, Ikemura M, Komuro I, Watanabe T. Laparoscopic resection of a gastrointestinal stromal tumor of the lower rectum in a patient with coronary artery disease following long-term neoadjuvant imatinib treatment and anticoagulation therapy. *World J Surg Oncol.* 2014 Jul; 12:211.
- (17) Oda K, Ikeda Y, Maeda D, Arimoto T, Kawana K, Fukayama M, Osuga Y, Fujii T. Huge pyogenic

cervical cyst with endometriosis, developing 13 years after myomectomy at the lower uterine segment: a case report. *BMC Womens Health*. 2014 Sep;14:104.

- (18) Ogawa M, Morikawa T, Toyoshima T, Fukayama M. Squamous cell carcinoma in a duplicated renal pelvis. *Int J Clin Exp Pathol*. 2014 Oct; 7(11):7957-61.
- (19) Sasaki T, Isayama H, Aoki T, Tanaka M, Hamada T, Nakai Y, Sakamoto Y, Hasegawa K, Morikawa T, Fukayama M, Kokudo N, Koike K. A R0 resection case of initially unresectable metastatic pancreatic cancer downstaged by FOLFIRINOX therapy. *Pancreas*. 2014 Aug;43(6):972-4.
- (20) Tanaka M, Ushiku T, Ikemura M, Shibahara J, Seto Y, Fukayama M. Esophageal adenocarcinoma arising in cervical inlet patch with synchronous Barrett's esophagus-related dysplasia. *Pathol Int*. 2014 Aug; 64(8):397-401.
- (21) Tsukamoto A, Nakamura F, Nannya Y, Kobayashi Y, Shibahara J, Ichikawa M, Fukayama M, Koike K, Kurokawa M. MALT lymphoma of the small bowel with protein-losing enteropathy. *Int J Hematol*. 2014 Feb; 99(2):198-201.
- (22) Tsuzuki S, Fukumoto H, Mine S, Sato N, Mochizuki M, Hasegawa H, Sekizuka T, Kuroda M, Matsushita T, Katano H. Detection of trichodysplasia spinulosa-associated polyomavirus in a fatal case of myocarditis in a seven-month-old girl. *Int J Clin Exp Pathol*. 2014 Jul; 7(8):5308-12.
- (23) Yagi H, Amiya E, Ando J, Watanabe M, Yanaba K, Ikemura M, Fukayama M, Komuro I. In-stent restenosis exacerbated by drug-induced severe eosinophilia after second-generation drug-eluting stent implantation. *Am J Case Rep*. 2014 Sep; 15: 397-400.
- (24) Yamagata Y, Ando Y, Matsusaka K, Karube H, Onoyama H, Aikou S, Yamashita H, Mori K, Nomura S, Fukayama M, Seto Y. Poorly differentiated mesenteric carcinoma of unknown primary site detected by abscess formation: case report. *World J Surg Oncol*. 2014 Jan;12:4
- (25) Yasutake T, Kiryu S, Akai H, Watadani T, Akahane M, Tomizawa N, Gono W, Ikemura M, Takahashi M, Matuoka Y, Ohtomo K. MR imaging of carcinosarcoma of the liver using Gd-EOB-DTPA. *Magn Reson Med Sci*. 2014; 13(2): 117-21.