
Department of Pathology and Diagnostic Pathology

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Introduction and Organization

Department of Pathology and Diagnostic Pathology is responsible for the practice of diagnostic pathology, education, and research in conjunction with Division of Diagnostic Pathology of the University Hospital*. Our aim is the construction of “pathology as clinical medicine” as well as “next-generation pathology incorporating cutting-edge science and technology”.

Dr. Maeda moved to Department of Cellular and Organ Pathology, Akita University, as associate Professor. Dr. Hayashi started his career as one of

Associates from April, and Dr. Tajima from September. Dr. Shinozaki-Ushiku became Lecturer (Hospital) on December. Dr. Shintani learned cardiovascular pathology and took a part in the research project of prognostic markers for predicting heart failure at Prof. James Stone’s laboratory, Cardiovascular Pathology, Massachusetts General Hospital from 11, Nov. to 12, Dec.

Three postgraduate students (Ando, Funata, and Tanei) finished the course and received Ph.D. In the new fiscal year, 2015, six new students will enter the postgraduate course, and there will be 17

postgraduates.

We are responsible for the pathology practice of the University Hospital, and are carrying forward the morphology-based research targeting human diseases. As for the education for the medical students, we take charge of the following courses; General Pathology Course for the 1st grade students in collaboration with Department of Molecular Pathology, Systemic Pathology for the 2nd grade, Elective Clinical Clerkship for the 3rd grade, and Clinical Clerkship for the 4th grade students. Programs for postgraduates and junior residents are also included in our education activities. A position of associate professor has been approved by the University headquarter for “Promotion of CPC Education and General Integrative Medicine” from next fiscal year. Dr. Ikemura will be assigned as Lecturer for this position.

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). The mission of the Center is to investigate basic technologies for tissue banking, and to hold seminars for doctors and technicians.

Clinical activities (diagnostic pathology and autopsy)

Together with Division of Diagnostic Pathology, we are responsible for the pathologic diagnosis and autopsy in the University Hospital. We set up Telepathology & Remote Diagnosis Promotion Center (TRD-PC), and started Outpatient Clinic of Pathology (see the corresponding section of Division of Diagnostic Pathology).

Surgical pathology conferences are regularly held with each clinical division, and the cases of various tumors are discussed, including thoracic organs, liver and pancreato-biliary tract, urology, gynecology, breast, and orthopedics, as well as biopsy cases of kidney, skin and GI tract.

Clinico-pathological conferences (CPCs) for two autopsy cases are held every month in the hospital. Both CPCs and weekly autopsy conferences are useful for the education of clinical residents. Digest versions of CPC slides are now open in the hospital (Drs.

Shintani and Hayashi), and we also started e-learning programs for clinical residents to facilitate the understanding of the CPC contents (Dr. Ikemura). All of residents were obligated to take the course for their training once a year. Dr. Abe, as one of delegates of Japanese Society of Pathology (JSP), was sent to Department of Pathology, Semmelweis University, Hungary from August 11 to 15, to evaluate whether their Training Course for Autopsy Pathology is feasible as training for Japanese pathologists. Based on their reports, the course was decided to be included in the JSP-official training program for Pathology specialty.

A model project for the survey analysis of deaths related to medical treatment (DRMT) has been in operation since September 2005, and we continue to be a member of the autopsy inspection of the project (Dr. Shibahara).

Teaching activities

We take on General Pathology Course for the 1st grade of undergraduate students, especially in its morphological field.

Each class of Systemic Pathology Course and exercises are held in parallel with that of Systemic Medicine Course. Handouts are available in every half course of the pathological exercises, and all slides used in the course are accessible on our website as virtual slides (digital images of the slides).

In Clinical Clerkship for 4th grade medical students, following courses are included; autopsy pathologic practices with a case presentation for paired students, surgical pathologic practices using various tumor sections, and a tour of the pathology laboratory.

Six students chose the clinical clerkship course for 3rd grade medical students. As for the free quarter program, we received one, three and one students of M0, M1 and M2, respectively, in this fiscal year.

We also set up the lecture series of “Infection/Immunology/Cancer II” and “Tumor Pathology. We also provided two intensive exercise courses, “Integration of Neuropathology/Raiology/Clinics” and “Histochemistry/Immuno-histochemistry/Clinical Electron Microscopy”.

Research activities

The first major theme is “chronic inflammation and neoplasms”, especially Epstein-Barr virus (EBV) associated gastric carcinoma (GC) (Drs. Kunita, Shinozaki-Ushiku and Abe). We are focusing on abnormalities of microRNA molecules and stem cell biology in the development and progression of EBV-associated GC in addition to its DNA methylation abnormality. Professor Fukayama presented the data as an invited lecture of 98th Congress of German Society of Pathology (June 12-14, Berlin, Germany). The Cancer Genome Atlas (TCGA) group published the results of comprehensive molecular analyses on July, 2014 (Nature 513:202), in which EBV-associated gastric cancer is classified as one of four subtypes of gastric cancer.

The second major theme is ‘translational research pathology’. We are engaged in search of target molecules for cancer therapy by global analysis of various cancers, in collaboration with Research Center for Advanced Science and Technology (RCAST). We identified *RHOA* mutation in diffuse type of gastric cancer with Prof. Shumpei Ishikawa (Tokyo Medical Dental University) and Prof. Aburatani (RCAST) (ref. 12, http://www.m.u-tokyo.ac.jp/news/admin/release_20140513.pdf). We also found high frequencies of telomerase gene mutation and Japanese-specific mutation signatures in hepatocellular carcinoma (HCC) in collaboration with Prof. Shibata (National Cancer Center, Medical Institute of University of Tokyo) and Prof. Aburatani (ref.38).

The third theme is to re-evaluate the disease entities and tumor entities from the standpoint of classical histopathology. Dr. Sibahara extracted a subgroup of HCC which showed histological features of steatohepatitis (steatohepatitic HCC), and clarified its clinicopathological features (ref.37, 37). Dr. Ushiku classified extrapapillary duodenal adenomas into gastric and intestinal subtypes, and each subtype is related with gastric or intestinal dysplasia, respectively (ref.40).

The research works closely related with pathology practice are described in Diagnostic Pathology Division.

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(including those of Diagnostic Pathology Division)
Case reports are listed in the section of Diagnostic Pathology Division.

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