Department of Radiology

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Research Activities

Division of diagnostic imaging

1. CT Characteristics of Human Papillomavirus (HPV)–Related Oropharyngeal Squamous Cell Carcinoma (OPSCC): Risk Factors for Treatment Failure in Surgical Management. HPV–related OPSCC showed treatment resistance. We evaluated preoperative CT images to clarify imaging features of patients with postoperative recurrence.

2. Differentiating between glioblastomas with and without isocitrate dehydrogenase (IDH) gene mutant from the imaging findings. Along with the revision of the 2016 WHO classification of brain tumors, molecular genetic parameters began to be used. In particular, IDH gene mutation is an important element in glioma classification. We examined whether the imaging findings can differentiate between glioblastomas with and without IDH gene mutation.

3. Evaluation of the infective endocarditis (IE) using cardiac CT. We retrospectively evaluated the depiction of vegetation and perivalvular complications in cardiac CT of the patients with IE, and compared with those in echocardiography and findings during surgery. Cardiac CT is potentially alternative modality to echocardiography in evaluating patients with IE.

4. Distribution and Characteristic CT Findings of Pneumocystis Jiroveci Pneumonia. The number of patients with PCP associated with HIV–AIDS is still increasing in this country. We retrospectively reviewed HRCT images of 46 patients with PCP, performed these 5 years, in our institution and analyzed the characteristic findings and distribution of the disease.

5. Breast MRI for prediction of lymphovascular invasion (LVI) in breast cancer patients with clinically negative axillary lymph nodes. The tumor apparent diffusion coefficient (ADC) value, the peritumoral ADC value, and the peritumor–tumor ADC ratio were predictive findings for LVI in patients aged ≤ 55 years.

6. MRI findings of placental invasion without placenta previa. We evaluated MRI findings of placental invasion without placenta previa. MRI features of placental invasion with placenta previa are also useful in the diagnosis of placenta percreta without placenta previa.

Division of Nuclear Medicine

1. The outcome of I-131 ablation therapy for high-risk differentiated thyroid cancer using a strict definition of successful ablation. High-risk patients, especially those with high

thyroglobulin levels (>10 ng/mL), are unlikely to reach levels low enough to meet successful ablation criteria, even with high-dose I-131.

Division of Interventional Radiology

1. Feasibility of 4dimensional (4D) digital subtraction angiography (DSA) for extracranial arteriovenous malformation(AVM). We retrospectively evaluated usefulness of 4D DSA for extracranial AVM compared to 3D DSA as initial experience.

Division of Radiation Therapy

1. Dose finding and confirmatory trial of superselective intra-arterial infusion of cisplatin and concomitant radiotherapy for patients with locally advanced maxillary sinus cancer. We have started new concept research that consists of dose-finding and confirmatory trial of superselective intra-arterial infusion of cisplatin and concomitant radiotherapy for patients with locally advanced maxillary sinus cancer.

Publications

Takenaga S, Aizawa Y. Efficacy and Safety of Transcatheter Embolization for Hepati Encephalopathy Caused by Spontaneous Portosystemic Shunts. *Interventional Radiology.* 2017; **2:** 51-8.

Watanabe K, Uchiyama M, Fukuda K. The outcome of I-131 ablation therapy for intermediate and high-risk differentiated thyroid cancer using a strict definition of successful ablation. *Jpn J Radiol.* 2017; **3:** 505-10.

Ashida H, Igarashi T, Morikawa K, Motohashi K, Fukuda K, Tamai N. Distinguishing gastric anisakiasis from non-anisakiasis using unenhanced computed tomography. *Abdom Radiol.* 2017; **42:** 2792-8.

Sadaoka A, Tojo S, Yonenaga T, Fukuda K. Usefulness of the Psoriatic Arthritis Magnetic Resonance Imaging Scoring System for Hands in Evaluation of Therapeutic Effect of Biological Agents in Patients with Psoriatic Arthritis. *Jikeikai Med J.* 2017; **64:** 37-44.

Matsushima S, Shimizu T, Gomi T, Fukuda K. Physiological laterality of superficial cerebral veins on susceptibility-weighted imaging. *J Comput Assist Tomogr.* 2018; **42:** 100-3.

Ohta T, Nishioka M, Nakata N, Fukuda K, Shirakawa T. Significance of perithyroidal lymph nodes in benign thyroid diseases. *J Med Ultrasonics.* 2018; **45:** 81-7.

Kitai S, Kiyokawa T, Tanaka Y, Onoue K, Takahashi H, Saitou M, Okamoto A, Fukuda K. MRI findings for primary fallopian tube cancer: correlation with pathological findings. *Jpn J Radiol.* 2018; **36:** 134-41.