

Department/Division:

Department of Otolaryngology-Head and Neck Surgery

Theme of research:

1. Vasoactivity of nasal blood vessels to various substances
2. Optimal treatment of epistaxis in patients with hereditary hemorrhagic telangiectasia
3. Mechanism of nasal obstruction
4. Formation of animal model of eosinophil-dominant nasal polyps

Name of main researcher, title, and e-mail address:

Keiichi Ichimura, Professor, [k-ichi@jichi.ac.jp](mailto:k-ichi@jichi.ac.jp)

Brief explanation of research activity:

1. Vasoactivity to various vasoactive substances, such as leukotrienes, prostaglandins, thromboxanes, is examined using in vitro bioassay technique. Specimens used are nasal mucosa from humans, guinea pigs, and rats.
2. Our department provides surgical therapy, such as nasal dermoplasty and nostril closure, for patients with hereditary hemorrhagic telangiectasia and is now a center of this procedure in Japan.
3. Vasodilatation, mucosal edema with increased vascular permeability, and mucosal fibrosis due to chronic inflammation are the factors responsible for mucosal swelling. Pharmacological intervention on the nasal mucosal swelling is on-going.
4. We have made eosinophil-dominant polyps by ovalbumin sensitization, blocking ostium and injecting inflammatory reagents along with MMP-2 into the maxillary sinus. Fibrinolytic factors have been shown to involve intimately in developing polyps as they regulate enzymatic activity in remodeling.

Department/Division: Department of Otolaryngology-Head and Neck Surgery

Theme of research:

Carcinogenesis in head and neck cancer

Name of main researcher, title, and e-mail address:

Kazuhiro Ishikawa, Assistant Professor, [kazu-ish@jichi.ac.jp](mailto:kazu-ish@jichi.ac.jp)

Brief explanation of research activity:

Rad9 in carcinogenesis of head and neck cancer : In response to replication perturbation or damage of DNA, cell-cycle checkpoint is activated, which leads to mutually exclusive, two consequences: cell cycle arrest and repair of damaged DNA, or induction of apoptosis. We studied a role of Rad9, which is a checkpoint molecule frequently amplified in epithelial tumor cells of breast, lung, head and neck cancer, in the DNA damage response through the tumor suppressor p53 pathway. Rad9 bound specifically to p53 regardless of phosphorylation status. Taken together with the assessment of immunohistochemistry showing overexpression of Rad9 in head and neck squamous cell carcinoma cell line, the study demonstrates overexpression of Rad9 leads to dysregulation of checkpoint response after DNA damages occur in head and neck cancer.

Department/Division:

Department of Otolaryngology - Head and Neck Surgery

Theme of research:

Clinical and Genetic Analysis of Hereditary Hearing Loss

Name of main researcher, title, and e-mail address:

Kotaro Ishikawa, M.D. Ph.D., Assistant Professor, e-mail: kotaro@jichi.ac.jp

Brief explanation of research activity:

We identify and characterize genes and mechanisms underlying hearing and hereditary hearing loss. We use both clinical and molecular biologic approaches for human and mouse models with hereditary hearing loss. Recently we reported a T7511C mutation in the tRNA<sup>Ser(UCN)</sup> gene in a Japanese family with nonsyndromic hearing loss. We showed that the extensive audiologic evaluation in the affected family with this mutation suggested both cochlear and retrocochlear involvement. In addition, we reported histopathological findings of the temporal bone from one subject in the Japanese family with this mutation. We showed that severe degeneration of spiral ganglion cells caused progressive sensorineural hearing loss in this mitochondrial DNA mutation.

Department/Division:

Department of Otolaryngology-Head and Neck Surgery

Theme of research: Head and Neck Cancer

Surgical Oncology, Radiation Oncology, Angiogenesis

Name of main researcher, title, and e-mail address:

Hiroshi Nishino, Associate Professor, e-mail: hiroshi@jichi.ac.jp

Brief explanation of research activity:

Combined therapy with surgery, radiotherapy, and regional chemotherapy for maxillary sinus carcinoma

Chemoradiotherapy for advanced head and neck cancer

Angiogenesis in tumor tissue

Department/Division:

Department of Otolaryngology-Head and Neck Surgery

Theme of research:

Epidemiological Study on Qualitative Olfactory Dysfunction

Name of main researcher, title, and e-mail address:

Toshio ISHIKAWA, Research associate, toshio.i@jichi.ac.jp

Brief explanation of research activity:

The frequency and prognosis of qualitative olfactory dysfunction (parosmia and phantosmia) has been investigated among outpatients. The impact of qualitative olfactory dysfunction on psychological status has also been evaluated using a self-rating depression scale.

Department/Division:

Department of Otolaryngology-Head and Neck Surgery

Theme of research: Regeneration of olfactory epithelium, with special interest in effect of glucocorticoids

Name of main researcher, title, and e-mail address:

Minako Takanosawa, Research Associate , e-mail: minako-t@jichi.ac.jp

Brief explanation of research activity:

Proliferative potency change by steroids in olfactory epithelium is measured using animals. Apoptosis in the olfactory epithelium has also been investigated