



Ajou University
School of Medicine

DEPARTMENT
OF

OTOLARYNGOLOGY



2009-2010
ANNUAL REPORT





OTOLARYNGOLOGY

AJOU UNIVERSITY SCHOOL OF MEDICINE

Welcome to Ajou ENT Home



6th Extraordinary
International Symposium
on Recent Advances in

Otitis Media

SEOUL, KOREA

MAY 6 - 10, 2009



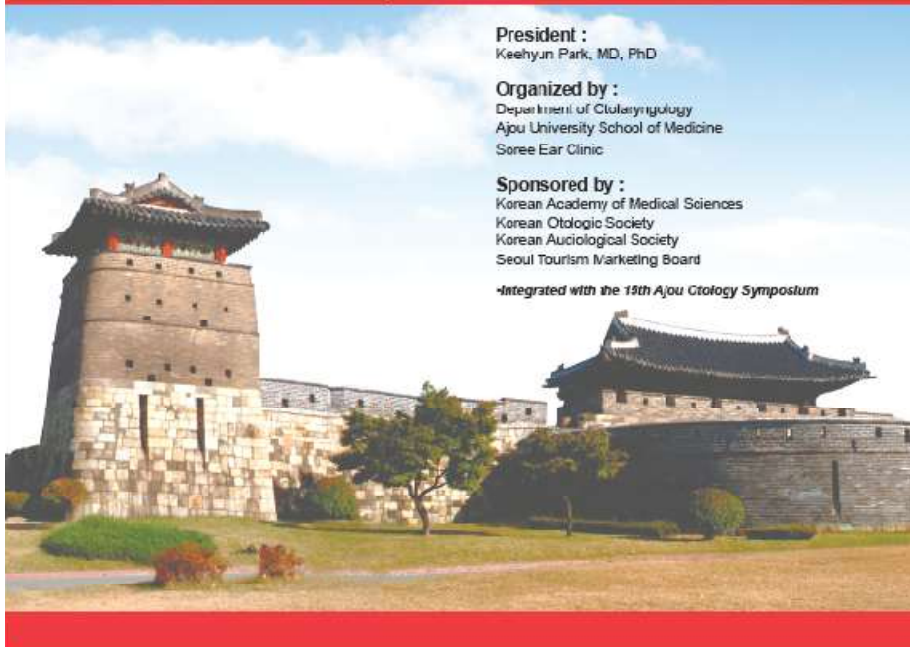
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President :
Keehyun Park, MD, PhD

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Department of Otolaryngology
Ajou University School of Medicine
Soree Ear Clinic

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**Integrated with the 19th Ajou Otology Symposium*



Department of Otolaryngology,
Ajou University School of Medicine,
San5, Wonchoon-Dong, Yeongtong-Gu, Suwon, Korea / 443-749
TEL : 82-31-219-5265, FAX : 82-31-219-5264

<http://www.ajou.ac.kr/~ent>

INTRODUCTION

The year 2009 was an international growth for the ENT Department of Ajou University Hospital. Together with staff and members of our ENT department, Prof. Keehyun Park hosted 'The 6th Extraordinary International Symposium on Recent Advances in Otitis Media' which was a great success. Enthusiastic and interesting discussions were brought together from participants all over the world. We thank all the doctors, professors, and attendees who contributed to this international conference.

In 2009, Associate Prof. Chul-Ho Kim studied in University of Tennessee, bringing back inspiring research papers and updated data. This exchanging scholar program enlightens our department to advanced knowledge and original perspectives. Also, Assistant Prof. Jinseok Lee joined our ENT department as a new staff member of head and neck subdivision.

In 2009, followed by Prof. Keehyun Park, I have assumed responsibility as a head of our ENT department. I will endeavor to manage the central role of domestic and international events, emulating Prof. Park's passion towards our department for the past 16 years. I also appreciate all the hard work of new and old members of the outpatient department including faculty members, residents, nursing staffs and laboratory technicians.

Respectfully,

Yun-Hoon Choung, D.D.S., M.D., Ph.D.

Chairman

Department of Otolaryngology

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The 6th Extraordinary International Symposium on Recent Advances in Otitis Media

PATIENT CARE

FACILITIES AND EQUIPMENTS

ROSTER

Faculty

Keehyun Park, M.D.

Professor

M.D. Yonsei University, 1976.
Ph.D. Yonsei University, 1982.
Otology, Neurotology
E-mail: parkkh@ajou.ac.kr

Yun-Hoon Choung, D.D.S., M.D.

Associate Professor and Chairman

D.D.S. Seoul National University, 1989.
M.D. Ajou University, 1996.
Ph.D. Ajou University, 2001.
Otology, Neurotology & Skull base surgery
E-mail: yhc@ajou.ac.kr

Chul-Ho Kim, M.D.

Associate Professor

M.D. Inha University, 1993.
Ph.D. Yonsei University, 2004.
Head & Neck Oncological Surgery,
Laryngology
E-mail: ostium@ajou.ac.kr

Hyun Jun Kim, M.D.

Associate Professor

M.D. Yonsei University, 1994.
Ph.D. Yonsei University, 2007.
Rhinology
E-mail: entkhj@ajou.ac.kr

Hun Yi Park, M.D.

Assistant Professor

M.D. Yonsei University, 1997.
M.S. Yonsei University, 2006.
Otology, Neurotology
E-mail: hunyi@ajou.ac.kr

Jinseok Lee, M.D.

Assistant Professor

M.D. Ajou University, 2000.
M.S. Ajou University, 2003.
Laryngology
E-mail: leejinseok_md@hanmail.net

Jong Bin Lee, M.D.

Instructor

M.D. Dongguk University, 2003.
M.S. Dongguk University, 2007.
Otology
E-mail: rogue25@chol.com

Jung Yun Mo, M.D.

Instructor

M.D. Ajou University, 2001.
M.S. Ajou University, 2005.
Otology
E-mail: momi95@hanmail.net

Sung Pyo Hong, M.D.

Instructor

M.D. Wonkwang University, 2000.
M.S. Ajou University, 2006
Rhinology
E-mail: hsp2218@yahoo.co.kr

Affiliated faculty

Hee Yong Lee, M.D. Clinical Prof.

M.D. Yonsei University, 1967.

Ph.D. Yonsei University, 1974.

Jeong Tai Kim, M.D. Clinical Prof.

M.D. Catholic University, 1969.

Ph.D. Catholic University, 1997

Hong-Joon Park, M.D. Clinical Prof.

M.D. Yonsei University, 1977.

Ph.D. Yonsei University, 1987

Young-Myoung Chun, M.D. Clinical Prof.

M.D. Yonsei University, 1979.

Ph.D. Yonsei University, 1996.

Chae-Shik Chung, M.D. Clinical Prof.

M.D. Chonnam University, 1979.

Ph.D. Chonnam University, 1985.

Soon Chul Huh, M.D. Clinical Prof.

M.D. Hanyang University, 1980.

M.S. Hanyang University, 1987.

Hyung Bo Shim, M.D. Clinical Prof.

M.D. Chonnam University, 1980.

Jeong Bae Kim, M.D. Clinical Prof.

M.D. Chung-Ang University, 1981.

Ph.D. Chung-Ang University, 1990.

Ho Sung Kim, M.D. Clinical Prof.

M.D. Seoul National University, 1982.

Ph.D. Hanyang University, 1989.

Jung Ha Suh, M.D. Clinical Prof.

M.D. Chung-Ang University, 1982.

Ph.D. Chung-Ang University, 1992.

Ho Sung Lim, M.D. Clinical Prof.

M.D. Yonsei University, 1983.

M.S. Yonsei University, 1986.

Sun-Bok Song, M.D. Clinical prof.

M.D. Inje University, 1986.

Keun Soo Hyun, M.D. Clinical Associate Prof.

M.D. Chung-Ang University, 1984.

Ph.D. Chung-Ang University, 2000.

Sung Woo Park, M.D. Clinical Associate Prof.

M.D. Korea University, 1986.

Ph.D. Korea University, 1996.

Ho-Sun Lee, M.D. Clinical Associate Prof.

M.D. Inje University, 1986.

Dong-Im Chang, M.D. Clinical Associate Prof.

M.D. Soonchunhyang University, 1987.

Ju-Hyun Eum, M.D. Clinical Associate Prof.

M.D. Yonsei University, 1987.

Ph.D. Ajou University, 2001.

Bong Ki Hong, M.D. Clinical Associate Prof.

M.D. Yonsei University, 1988.

Deuk Moon Ma, M.D. Clinical Assistant Prof.

M.D. Chosun University, 1989.

Jee-Won Kang M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1989.
M.S. Yonsei University, 1996.

Jung Sun Yeun, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1989.

Sang-Joon Shin, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1990.

Man Soo Kim, M.D. Clinical Assistant Prof.
M.D. Korea University, 1990.

Seong-Mo Koo, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1990.
M.S. Ajou University, 1997.

Jin-Seok Lee, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1990.
Ph.D. Ajou University, 2001.

Jang Ho Cho, M.D. Clinical Assistant Prof.
M.D. Hallym University, 1991.

Dong-Hoon Lee, M.D. Clinical Assistant Prof.
M.D. Chung-Ang University, 1991.
Ph.D. Ajou University, 1999.

Ju-Ho Han, M.D. Clinical Assistant Prof.
M.D. Chosun University, 1976.
Ph.D. Wonkwang University, 1996.

Byung-il Park, M.D. Clinical Assistant Prof.
M.D. Pusan National University, 1991.
M.S. Pusan National University, 1995.

Sung-Yeun Ahn, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1991

Young-Han Goh, M.D. Clinical Assistant Prof.
M.D. Pusan National University, 1993.
M.S. Pusan National University, 2003.

Hee Sub Chung, M.D. Clinical Assistant Prof.
M.D. Inje University, 1993.

Hui-Zun Kim, M.D. Clinical Assistant Prof.
M.D. Gyeongsang National University, 1993.

Seong Kyun Kim, M.D. Clinical Assistant Prof.
M.D. Yonsei University, 1995.
M.S. Ajou University, 2000.

Byung-Chul Kim, M.D. Clinical Assistant Prof.
M.D. Ajou University, 1996.
M.S. Ajou University, 2000.

Min-Ho Jang, M.D. Clinical Assistant Prof.
M.D. Busan University, 1996.
M.S. Busan University, 1999.

Tae-hyun Kim, M.D. Clinical Assistant Prof.
M.D. Chonnam University, 1991.
Ph.D. Chonnam University, 2001.

Residents

FOURTH YEAR

Hison Kahng, M.D. M.D. Ajou University, 2003

Nam Soo Han, M.D. M.D. Ajou University, 2005

THIRD YEAR

Jong Joo Lee, M.D. M.D. Ajou University, 2006

Eun Hwang, M.D. M.D. Ajou University, 2006

SECOND YEAR

Jung Joo Hong, M.D. M.D. Chonbuk University, 2007

In Kyung Sohn, M.D. M.D. Yonsei University, 2006

FIRST YEAR

Han Bin Lee, M.D. M.D. Hanyang University, 2006

Oak-Sung Choo, M.D. M.D. Chonnam University, 2008

Visiting Fellow

Seung Won Kim M.D. Yanbian University, 2002

Staff members in addition to faculty

NURSE

Moon Hee Jeong, R.N.

Hae Sug Lee, R.N.

NURSE PRACTITIONER

Nari Shin, R.N.

AUDIOLOGICAL LABORATORY

Hyoung Ah Mun

VESTIBULAR LABORATORY

Mi-You Ko

VOCAL DYNAMIC & SPEECH LABORATORY

You-Jeong Kim

Ae-Ri Yim

MOLECULAR BIOLOGY LABORATORY

Hye Sook Hwang

Jung-Hee Pyeon

Hae Kyung Lee

SECRETARY

Jung Eun Choi

NURSE AID

Kyoung Ae Choi

Hwan Hee Lee

Soonyi Son, R.N.

Young-Sook Kang

Seon A Jeong

Seul-Ah Kang

Sung-Un Kang

Mi Hye Lee

Eun Young Hwang

Hye Jin Jeong Chae Young Lim

Hye Jin Cho

Hee Kyung Han

Yong Woo Kwon

Ha-Neul Lee

Jung-Sook Joo

SOCIETY MEMBERSHIPS, UNIVERSITY & HOSPITAL COMMITTEEKeehyun Park, M.D.

Korean Medical Association
Korean Society of Otolaryngology, President
Korean Audiological Society, Trustee
The Society of Korean Logopedics & Phoniatics
International Association of Logopedics and Phoniatics
Korean Society of Medical Education
The Korean Otologic Society
Korean Skull Base Surgery Society
Aeromedical Association of Korea
American Association for Research in Otolaryngology
Japan Otologic Society
American Academy of Otolaryngology-Head and Neck Surgery
Collegium Oto-Rhino-Laryngologicum Amicitiae Sacrum
The 6th Extraordinary International Symposium on Recent Advances in Otitis Media, President
Administration Committee of Ajou University Medical Center, Chair
Medical Staff Administration Committee of Ajou University Medical Center, Chair
Korean Medical Center President Association, Vice-president
Reviewer: Korean Journal of Otorhinolaryngology –Head and Neck Surgery, Yonsei Medical Journal, Laryngoscope, Otology and Neurotology, Histology and Histopathology, British Medical Journal, Vaccine, European Archives of Oto-Rhino-Laryngology and Head & Neck, Journal of the Association for Research in Otolaryngology

Yun-Hoon Choung, D.D.S., M.D.

Korean Medical Association
Korean Dental Association
Korean Society of Otolaryngology
The Korean Otologic Society, Director of International Cooperation Committee
Korean Society of Medical Biochemistry and Molecular Biology
The Korean Society of Medical Education
Korean Tissue Engineering Society
Association for Research in Otolaryngology
Korean Skull Base Surgery Society
Korean Balance Society

Korean Audiological Society

Korean Society for Head and Neck Surgery

Clinical and Experimental Otorhinolaryngology: Editorial Board

Journal of Korean Otolaryngological Society: Editorial Board

The Korean Society of Ginseng

The Politzer Society

The 6th Extraordinary International Symposium on Recent Advances in Otitis Media, General Secretary

Reviewer: Journal of Korean Otolaryngological Society, Laryngoscope, European Archives of Oto-rhino-laryngology, Clinical and Experimental Otorhinolaryngology, Journal of Korean Balance Society

Chul-Ho Kim, M.D.

Korean Medical Association

Korean Society of Otolaryngology

The Korean Head and Neck Study Group

The Society of Korean Logopedics & Phoniatics

The Korean Society for Head & Neck Oncology

Korean Society of Medical Biochemistry and Molecular Biology

Korean Tissue Engineering Society

Korean Society of Endocrine Surgery

The Korean Bronchoesophagological Society

Korean Cancer Association

Reviewer: Journal of Korean Otolaryngological Society, Journal of Korean Medical Association, Yonsei Medical Journal, Laryngoscope

Hyun Jun Kim, M.D.

Korean Medical Association

Korean Society of Otolaryngology

Korean Rhinologic Society

Korean Academy of Asthma, Allergy and Clinical Immunology

Korean Society of Facial Plastic Surgery and Traumatology

Korean Institute of Electromagnetic Engineering Science

Reviewer: Journal of Korean Otolaryngological Society, Laryngoscope

Hun Yi Park, M.D.

Korean Medical Association

Korean Society of Otolaryngology

The Korean Otologic Society

Korean Balance Society

Korean Audiological Society

Jinseok Lee, M.D.

Korean Medical Association

Korean Society of Otolaryngology

The Korean Society for Head & Neck Oncology

The Korean Bronchoesophagological Society

Jong Bin Lee, M.D.

Korean Medical Association

Korean Society of Otolaryngology

The Korean Otologic Society

Korean Balance Society

Korean Audiological Society

Jung Yoon Mo, M.D.

Korean Medical Association

Korean Society of Otolaryngology

The Korean Otologic Society

Korean Balance Society

Korean Audiological Society

Sung Pyo Hong, M.D.

Korean Medical Association

Korean Society of Otolaryngology

Korean Rhinologic Society

TRAVEL

Keehyun Park, M.D.

- National University of Singapore Visit
(Singapore: Jan 21-23, 2009)
- Seven Departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)
- The 19th World Congress of Otorhinolaryngology-Head & Neck Surgery
(São Paulo, Brazil: Jun 1-5, 2009)

Yun-Hoon Choung, D.D.S., M.D.

- Seven Departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)
- The 26th Politzer Society Meeting
(London, UK: Sep 3-5, 2009)
- 113rd American Academy of AAO-HNSF Annual Meeting & Oto Expo
(San Diego, CA, USA: Oct 4-8, 2009)
- The 33rd Annual Midwinter Research Meeting in Association for Research in Otolaryngology
(Anaheim, CA, USA: Feb 6-10, 2010)

Chul-Ho Kim, M.D.

- Exchanging Scholar – Department of Pathobiology, College of Veterinary Medicine, The University of Tennessee
(Knoxville, Tennessee, USA: Dec 16, 2008 ~ Feb 28, 2010)

Hyun Jun Kim, M.D.

- Seven departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)
- The 13th International Rhinoplasty Workshop
(Zhengzhou, China: Nov 6-9, 2009)

Hun Yi Park, M.D.

- Seven departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)
- Federation of Clinical Immunology Society: Advanced Course in Basic & Clinical Immunology

(Scottsdale, USA: Feb 24-28, 2010)

Jinseok Lee, M.D.

- Head & Neck Course

(Hong Kong: Jun 17-20, 2009)

Jong Bin Lee, M.D.

- 7th Asia Pacific Symposium on Cochlear Implants and Related Sciences (APSCI 2009)

(Singapore: Dec 1-4, 2009)

- 7th International Practical Course in Otology and Temporal Bone Surgery

(Berlin, Germany: Mar 4-7, 2009)

Jung Yoon Mo, M.D.

- Cochlear Implant Training Workshop

(Melbourne, Australia: Oct 26, 2009)

Sung Pyo Hong, M.D.

- The 13th Croatian International Rhinosurgical Advanced School (CIRAS)

(Zagreb, Croatia: Sep 23-25, 2009)

PRESENTATION

Keehyun Park, M.D.

- 2009 Clinical Otology and Neurotology Symposium
(Seoul: Mar 21, 2009)
“Controversy in the treatment of E-tube disorder”
- Seven Departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)
“Isolated congenital ossicular anomaly”
- The 38th Korean Otologic Society Meeting
(Seoul: Apr 4, 2009)
“Atticoplasty: management of early cholesteatoma”
- The 83rd Annual Meeting of Korean Otolaryngological Society
(Seoul: Apr 26, 2009)
“Pathogenesis of otitis media: what has been changed during past 30 years?”
- The 19th IFOS World Congress
(São Paulo, Brazil: Jun 3, 2009)
“Management of congenital mesotympanic cholesteatoma in children”

Yun-Hoon Choung, D.D.S., M.D.

- The 38th Korean Otologic Society Meeting
(Seoul: Apr 4, 2009)
“Newborn hearing screening”
- The 6th Extraordinary International Symposium on Recent Advances in Otitis Media
(Seoul: May 6-10, 2009)
“The change of bone conduction threshold in patients with chronic otitis media”
“Rat model for chronic tympanic membrane perforation and the efficiency of chitosan patch scaffold for treatment”
- The 83rd Annual Meeting of Korean Otolaryngological Society
(Seoul: Apr 26, 2009)
“Prognostic factors for hearing gain after hearing aids”
“Effect of FM system in children with cochlear implantation”
“Intracellular mechanisms of gentamicin-induced hair cell damage in neonatal rat organ of Corti”
“Affecting factors of users or non-users in cochlear implantations”
- The 15th Combined Congress of Otorhinolaryngology Head and Neck Surgery

(Gyeongju: Oct 23-24, 2009)

“Ginko biloba extracts, Egb 761 prevent cisplatin-induced hair cell death in rats (in vivo and ex vivo studies)

“Clinical and pathologic features of melanocytic nevi of external ears”

“Clinical significance of Bondy operations in middle ear surgeries”

“The significance of 180° head rotation in head roll test for horizontal semicircular canal BPPV”

▪ 19th Meeting of Korean Balance Society

(Seoul, Dec 5, 2009)

“Comparison of diagnostic validation: Electrocochleography vs. cochlear hydrops analysis masking procedure (CHAMP) in Meniere’s disease”

“The significance of 180° head rotation in head roll test for horizontal semicircular canal BPPV”

▪ 27th Politzer Society Meeting

(London, UK: Sep 3-5, 2009)

“Rat model for chronic tympanic membrane perforation and the efficiency of chitosan patch scaffold for treatment”

▪ The 33rd Annual Midwinter Research Meeting in Association for Research in Otolaryngology

(Anaheim, CA, USA: Feb 6-10, 2010)

“The differential vulnerability across cochlear turns in gentamicin-induced hair cell damage is correlated with the differential uptake of gentamicin”

Hyun Jun Kim. M.D.

▪ Seven Departments Joint Meeting of Otolaryngology

(Osaka, Japan: Mar 27-28, 2009)

“Significance of osteoporosis in facial bone density using the computerized tomography scan”

▪ The 3rd Workshop on the Airway Inflammation for Young Investigator

(Seoul: Apr 4, 2009)

“Expression of MMPs and TIMPs by LTA from *Staphylococcus aureus* in normal human nasal epithelial cell”

▪ The 83rd Annual Meeting of Korean Otolaryngological Society

(Seoul: Apr 26, 2009)

“The effect of propolis on mucociliary transport & healing in human respiratory mucosa”

“A case of aggressive NK/T cell lymphoma with oronasal fistula with pterygopalatine and infratemporal fossa invasion”

“A case of facial paralysis after endoscopic sinus surgery”

▪ 13th Workshop on Health Effects of EMF and Bioelectromagnetic Environment

(Seoul: Sep 3, 2009)

“The effect of electromagnetic wave on mucociliary transport in human airway”

- The 15th Korean Combined Congress of Otorhinolaryngology

(Gyeongju: Oct 23-24, 2009)

“The effects of LTA of *Staphylococcus aureus* on MMPs & TIMPs in human middle ear epithelial cell line”

“Two cases of maxillary sinusitis after reduction malarplasty with osteotome”

“A case of aggressive NK/T cell lymphoma accompanying erythema and necrosis of nasal dorsum”

- Rhinology Update Symposium in 2009

(Seoul: Nov 4, 2009)

“Treatment of allergic rhinitis based on new ARIA guideline”

Hun Yi Park, M.D.

- Seven Departments Joint Meeting of Otolaryngology

(Osaka, Japan: Mar 27-28, 2009)

“Clinical analysis of horizontal canal benign paroxysmal positional vertigo according to the presence or absence of spontaneous nystagmus”

- The 83rd Annual Meeting of Korean Otolaryngological Society

(Seoul: Apr 24-26, 2009)

“Analysis of spontaneous nystagmus in BPPV of lateral canalolithiasis”

“A case report of Melkersson-Rosenthal syndrome”

- The 15th Korean Combined Congress of Otorhinolaryngology

(Gyeongju: Oct 23-24, 2009)

“Mechanism of apoptosis of inner ear hair cell line promoted by inflammatory cytokine”

Departmental research activities are always a source of pride among the faculty. Research in the Department of Otolaryngology continues to grow with investigations, which include both basic and clinical interdepartmental and interdisciplinary research.

PUBLICATIONS

- Park K, Chung YH. Isolated congenital ossicular anomalies. *Acta Otolaryngol* 2009;129(4): 419-22.
- Park HY, Han DH, Lee JB, Han NS, Chung YH, Park K. Congenital stapes anomalies with normal eardrum. *Clin Exp Otorhinolaryngol* 2009;2(1): 33-8.
- Chung YH, Taura A, Pak K, Choi SJ, Masuda M, Ryan AF. Generation of highly-reactive oxygen species is closely related to hair cell damage in rat organ of Corti treated with gentamicin. *Neuroscience* 2009;161(1): 214-26.
- Kim JH, Choi SJ, Park JS, Lim KT, Chung PH, Kim SW, Lee JB, Chung JH, Chung YH. Tympanic membrane regeneration using a water-soluble chitosan patch. *Tissue Eng Part A* 2010;16:225-32.
- Kim JH, Bae JH, Lim KT, Chung PH, Park JS, Choi SJ, Im AL, Lee ET, Chung YH, Chung JH. Development of water-insoluble chitosan patch scaffold to repair traumatic tympanic membrane perforations. *J Biomed Mater Res A* 2009;90(2): 446-55.
- Lee JH, Park K, Kang TC, Chung YH. Three-dimensional anatomy of the temporal bone in normal mice. *Anat Histol Embryol* 2009;38(4):311-5.
- Kim DY, Pyun J, Choi JW, Kim JH, Lee JS, Shin HA, Kim HJ, Lee HN, Min BH, Cha HE and Kim CH. Tissue-engineered allograft tracheal cartilage using fibrin/hyaluronan composite gel and its in vivo implantation. *Laryngoscope* 2010;120(1):30-8.
- Oh JH, Hur GY, Ye YM, Kim JE, Park K, Park HS. Correlation between specific IgA and eosinophil numbers in the lavage fluid of patients with perennial allergic rhinitis. *Allergy Asthma Proc* 2008;29:152-60.
- Song KS, Kim HJ, Kim K, Lee JG, Yoon JH. Regulator of G-protein signaling 4 suppresses LPS-induced MUC5AC overproduction in the airway. *Am J Respir Cell Mol Biol.* 2009 Jul;41(1):40-9.
- Kim JH, Cho CS, Chung YH, Lim KT, Son HM, Seonwoo S, Baik SJ, Jeon SH, Park JY, Chung PH, Chung JH. Mechanical stimulation of mesenchymal stem cells for tissue engineering. *Tissue Eng Regen Med* 2009;6: 199-206
- Lim KT, Cho CS, Chung YH, Kim JH, Son HM, Seonwoo H, Baik S, Jeon SH, Park JY, Chung PH, Chung JH. Novel perfusion bioreactor systems for tissue engineering. *Tissue Eng Regen Med* 2009;6: 207-18

- Lim KT, Cho CS, Choung YH, Kim JH, Seonwoo H, Son HM, Jeon SH, Park JY, Choung PH, Chung JH. Influence of static magnetic field stimulation on cells for tissue engineering. *Tissue Eng Regen Med* 2009;6:250-8
- Lim KT, Cho CS, Choung YH, Seonwoo H, Son HM, Baik SJ, Kim JH, Hong SM, Park SY, Jeon SH, Choung PH, Chung JH. Development of a perfusion flow bioreactor system for culturing human alveolar bone marrow stem cells. *Tissue Eng Regen Med* 2009; 6:1410-9
- Kim SH, Park HY, Choi HS, Chung HP and Choi JY. Functional and molecular expression of epithelial sodium channels in cultured human endolymphatic sac epithelial cells. *Otol Neurotol* 2009;30(4): 529-34.
- Son EJ, Kim SH, Park HY, Kim SJ, Yoon JH, Chung HP and Choi JY. Activation of epithelial sodium channel in human middle ear epithelial cells by dexamethasone. *Eur J Pharmacol* 2009;602(2-3): 383-7.
- Kim DH, Oh JH, Lee JJ, Kim HJ. A case of pyoderma gangrenosum on the nasal dorsum. *Arch Otolaryngol Head Neck Surg.* 2010;136(2):193-6.
- Kim JH, Chung PH, Kim IY, Lim KT, Son HM, Choung YH, Cho CS, Chung JH. Electrospun nanofibers composed of poly(ϵ -caprolactone) and polyethylenimine for tissue engineering applications. *Mat Sci Eng C.* 2009; 29(5):1725-31.
- Lim KT, Kim JH, Seonwoo H, Son HM, Baik SJ, Park JH, Jeon SH, Kim ES, Choung YH, Cho CS, Choung PH, Chung JH. In vitro effects of electromagnetic field stimulation on cells in tissue engineering. *Tissue Eng Regen Med* 2009;6: 675-84
- Lim KT, Seonwoo H, Son HM, Baik SJ, Kim JH, Jeon SH, Park JY, Choung YH, Cho CS, Choung PH, Chung JH. Biomechanical effects of fluid dynamics and mass transport on cell growth in perfusion bioreactors for tissue engineering. *Tissue Eng Regen Med* 2009;6:1327-42
- Park K. Recent advances in pathogenesis of otitis media. *J Clinical Otolaryngol.* 20:141-8, 2009
- Han NS, Lee JB, Choi SJ, Sohn I, Mo JY, Lee JJ, Choung YH. Two cases of artificial reconstruction using an epithese. *Korean J Otorhinolaryngol Head Neck Surg* 2009;52:991-5.
- Park HY, Han DH, Lee JB, Choi SJ, Choung YH, Park K. Isolated congenital incus anomaly. *Korean J Otorhinolaryngol Head Neck Surg* 2009;52:335-43
- Kahng H, Lee JJ, Kim HJ, Jang SY. Two cases of pneumocele of maxillary sinus. *Korean J Otorhinolaryngol-Head Neck Surg* 2009;52(11):917-20

ABSTRACTS

1. International Meeting

- Seven Departments Joint Meeting of Otolaryngology
(Osaka, Japan: Mar 27-28, 2009)

“Isolated congenital ossicular anomaly”

Background: A non-progressive and conductive hearing loss in the range of 40 to 60dB with normal tympanic membrane which has no history of trauma or infection is highly suggestive of a congenital ossicular malformation. Stapes anomaly is the most common among the ossicular anomalies, and they are clinically important because hearing loss can be corrected by appropriate procedure. The purpose of this study is to describe patterns of the ossicular anomaly encountered in patients who have a normal eardrum, and to analyze its surgical result with special reference to its patterns. *Study design:* I experienced 78 cases(94 ears) of congenital ossicular anomaly which were confirmed through the explotympanotomy for the last 20 years. The preoperative and postoperative audiologic findings, operative findings and temporal bone CT findings were analyzed. *Results:* There were 20 anomalous patterns of ossicular anomaly among which stapes footplate fixation was the most common anomaly. I classified congenital ossicular anomaly into 5 types according to the status of the stapes footplate. Stapes footplate fixation was the most common type which was usually bilateral, while anomalies associated with incus and malleus were usually unilateral. I could get hearing improvement in 72.3% of my cases after surgery. *Conclusions:* There were a great diversity of patterns of ossicular anomaly, which were detected without a certain rule of pattern and big variety of those patterns can be detected again in the future. The success of surgical treatment of congenital ossicular anomaly might depend on the status of the stapes footplate.

“Clinical analysis of horizontal canal Benign Paroxysmal Positional Vertigo according to the presence or absence of spontaneous nystagmus”

Objective: Benign Paroxysmal Positional Vertigo (BPPV) is a common form of vertigo caused by dislodged otoconia making its way from the utricle mainly into the posterior semicircular canal. In 5% to 22% of cases, the otoconia will be displaced into the horizontal canal, or more rarely, the anterior canal. Recently, there are some reports on horizontal canal BPPV (h-BPPV) who showed spontaneous nystagmus (SN). The aim of this study is to evaluate the incidence of SN in h-BPPV and to compare patients' response to physical treatment and outcome of patients with h-BPPV with SN with those with h-BPPV without BPPV. *Material and Methods:* A prospectively designed study was carried out at Department of Otolaryngology, Ajou University Hospital, Suwon, Korea. Computer analysis of ENG recordings was routinely performed. Video-oculographic recording

included spontaneous nystagmus in the primary position of the eye and positional testing. *Results:* Sixteen patients (24.1%) of 66 showed SN. Fifty percent of patients with h-BPPV with SN required repeated physical treatments in comparison to 18% of patients with h-BPPV without SN. *Conclusions:* It appears that h-BPPV with SN is more difficult to treat than h-BPPV without SN.

“Significance of osteoporosis in facial bone density using the computerized tomography scan”

Objective: To evaluate and compare the variations of bone density in mid-facial bone measured by QCT(Quantitative Computerized Tomography) scan between osteoporosis group and control group. We also tried to find out the region which was closely associated with facial bone fracture due to trauma and iatrogenic osteotomy. *Materials and Methods:* Eighty two patients who underwent both Osteomeatal unit(OMU) CT scans and Dual-Energy X-ray Absorptiometries (DEXA) at Ajou Univ. Medical Center were included in this retrospective study. Thirty- three patients (25 female, 8 male, mean age 57.66) were in osteoporosis group, forty-nine patients (39 female, 10 male, mean age 56.63) were in control group. Seven skeletal regions were chosen for each patient and each side ;Group A(Ortial floor(OF), Nasal bone(NB)), Group B(Zygomaticomaxillary suture(ZMS), Zygomatic arch(ZA), Zygomaticofrontal suture (ZFS)), Group C(Anterior wall of maxillary antrum(AM), Maxillary process(MP)). As a result, 1148 ROI(Region of Interest) region were considered for this study. The QCT scan were reviewed with the PACS(Picture Archiving and Communication System: Piview, INFINITT Technology Co., Ltd., Seoul, Korea). Pixel intensity was analyzed by indicating the mouse in the ROI and HU(Housefield Unit) were measured. The facial bone mineral density of mid-facial bone region was compared between osteoporosis group and control group. *Result:* The significant difference in the mean bone density of mid-facial bone had been established between the osteoporosis group and control group ($P<0.01$) except only ZMS ($P>0.05$). In both groups, the facial bone mineral density of Group A was the smallest and the group C was the largest group. ($P<0.01$). *Conclusions:* We could see the difference of the facial bone mineral density between the osteoporosis and the control group using the QCT scan. Therefore, osteoporosis patients can be traumatized easily in the facial region. Also, delicate care should be provided during osteotomy procedure in these patients.

▪ The 6th Extraordinary International Symposium on Recent Advances in Otitis Media
(Seoul, Korea: May 6-10, 2009)

“The change of bone conduction threshold in patients with chronic otitis media”

Introduction: Chronic otitis media (COM) is generally associated with some degree of hearing loss, which is often the patient’s chief complaint. While the conductive loss can be minimized through surgery, sensorineural hearing loss (SNHL) cannot improve permanently, attenuated only

through use of a hearing aid. The objective of this study was to evaluate whether COM can cause worsening of bone conduction (BC) thresholds by comparing affected ears with their normal contralateral counterparts. And it was to clarify whether surgeries could improve bone conduction thresholds in COM patients by comparing the BC threshold of affected ears between preoperatively and postoperatively. *Materials and Methods:* One hundred and ninety-nine patients from the COM outpatient clinic of Ajou Medical Center were evaluated. Inclusion criteria were: (1) normal tympanic membrane in the contralateral ear; (2) the presence of chronic, unilateral otitis media, defined as inflammation of the middle ear cavity lasting more than 3 months, with tympanic perforation, without associated cholesteatomas; (3) a contralateral audiometry with BC threshold < 30 dB at 0.5, 1, 2, and 4kHz frequencies with no air-bone gap; (4) no specific cause of SNHL such as ototoxicity due to medication, noise exposure, or labyrinthitis; (5) first otologic surgery due to unilateral COM. We analyzed the information of the patients including sex, age, past medical history, duration of symptoms, pre-operative Pure Tone Audiometry (PTA), the name of surgery, and post-operative 2 or 3 months follow-up PTA. *Results:* It showed that the significant correlation between age and pre-op BC thresholds of the affected ear. In other words, the older, the worse. But, there was no significant correlation between the duration of COM and pre-op BC threshold. Thus, we defined the interaural BC gap; that is the numerical difference between pre-operative BC of the affected ear and BC of the normal ear. There was significant correlation between age and interaural BC gap. The older, the larger. And it also showed that significant correlation between the duration of COM and the interaural BC gap at 0.5 & 1 kHz. The longer the duration was, the larger the interaural BC gap was. As well, there was significant change of BC threshold between pre-operative and post-operative hearing level at 0.5, 1, and 2k Hz. But, it showed no significant differences in recovery of BC threshold between tympanoplasty and tympanomastoidectomy. *Conclusions:* The interaural BC gap is more important to evaluate the change of BC threshold in patients with COM rather than a use of absolute BC threshold. The interaural BC gap depends on patients' preoperative age and partially on the duration of COM. BC threshold is significantly recovered after surgeries, tympanoplasty or tympanomastoidectomy. These results suggest that BC threshold seems to be caused by both the change of sound conduction and inflammatory mediators.

- The 19th World Congress of Otorhinolaryngology-Head and Neck Surgery
(São Paulo, Brazil: Jun 3, 2009)

"Management of congenital mesotympanic cholesteatoma in children"

There is an increasing awareness of congenital cholesteatomas in recent decades. The location of the congenital cholesteatoma, when possible initially, can be classified in relation to the four quadrant of the eardrum. Gross-pathologically, there are two types of congenital cholesteatoma: a closed keratotic cyst and an open matrix. Patients with open-type congenital cholesteatoma may

have a different clinical presentation from the classical description of congenital cholesteatoma. The staging system of the congenital cholesteatoma which influences its surgical approaches shows its extension according to its involvement and ossicular erosion. This study aimed to analyze clinical characteristics of cases with congenital cholesteatoma in the middle ear under the age of 10, and to facilitate better understanding of its management. We reviewed retrospectively 91 patients who were diagnosed as congenital middle ear cholesteatoma under its definite criteria in Ajou University Hospital for the last 14 years (1994-2008). This study was done by analyzing the patients' history, drum finding, temporal bone CT finding, operative finding and pathologic finding. In this study, the open-type congenital cholesteatoma which was less common and usually originated from posterosuperior quadrant of the mesotympanum showed higher degree of hearing loss and more frequent unusual presentation, and detected at an older age than the closed-type congenital cholesteatoma. 31 cases (34.1%) with congenital cholesteatoma were associated with OME. 77 cases (84.6%) with congenital cholesteatoma were confined to the mesotympanum, of which surgery were done mostly through the transcanal approach. The recidivism was detected in 10 cases (11.0%).

In conclusion, management of mesotympanic congenital cholesteatoma in children may be done as soon as possible when diagnosed. The treatment algorithm of congenital cholesteatoma according to its stage requires further discussion for the better result.

▪ 27th Politzer Society Meeting

(London, UK: Sep 3-5, 2009)

“Rat model for chronic tympanic membrane perforation and the efficiency of chitosan patch scaffold for treatment”

Chronic tympanic membrane perforation (CTMP) is a representative otologic disease that requires surgical procedures. However, there have been no good alternative managements which can easily be applied at outpatient clinics and also no ideal animal models for the study of CTMP. Therefore, we devised rat models for CTMP and assessed the efficiency of chitosan patch scaffolds (CPS) which we had previously developed. We applied the following eight methods to 85 Sprague-Dawley rats to make CTMP which could remain for at least four weeks; I) simple perforation, II) mitomycin C (MC) for 10 min in the perforation areas, III) MC for 10 min and then saline gelfoam for 1 week, IV) MC for 10 min and dexamethasone gelfoam for 1 week, V) MC gelfoam for 1 week, VI) dexamethasone gelfoam for 1 week, VII) making perforation with a heated pick, and VIII) local application of dexamethasone gelfoam for 1 week after making perforations with heated micropicks. Among these methods, the method VIII showed 100% successes rate for maintenance of perforations over 4 weeks, followed by V (75%), IV (35.7%), and III (33.3%), whereas the methods I, II, VI, and VII showed 0%. Next, we assessed the healing efficiency of CPS using the CTMP models by comparing with paper patches and none management. In the

method VIII models, there was no perforation healed with any patches during more than 9 weeks. In the animal models prepared with the method V, the CPS-applied rats showed 70% of healing rate which was better than 40% in rats with paper patches or none managements. These results indicate that animal models with CTMP could be prepared with local application of MC for 1 week, and that CPS might be potentially an ideal material that could affordably be used in office-based settings for the regeneration of CTMP.

▪ The 33rd Annual Midwinter Research Meeting in Association for Research in Otolaryngology (Anaheim, CA, USA: Feb 6-10, 2010)

“The differential vulnerability across cochlear turns in gentamicin-induced hair cell damage is correlated with the differential uptake of gentamicin”

Purposes: Basal turn hair cells (HCs) in the organ of Corti (oC) is most vulnerable to gentamicin(GM) followed by middle turns and apical turns. Moreover, the differential sensitivity of HCs appears to be closely related to differences in highly reactive oxygen species (hROS) formation (Choung YH, 2009). The purpose of this study is to evaluate whether the differential vulnerability across cochlear turns in GM-induced HC damage is correlated with the differential uptake of GM. *Materials and Methods:* Explants of basal, middle or apical turn in organ of Cortis (oCs) from neonatal (p3) rats were cultured and exposed to GM(50uM, 35uM) for 48h. The uptake of GM was evaluated by immunohistochemistry using anti-GM antibody. These explants were co-labeled with MyoVIIa (hair cell staining) and DAPI (nucleus staining) for detection HC loss across cochlear turns. The intensities of GM fluorescence expressed in HCs were compared in each turns and rows and also analyzed comparing with the loss of hair cells. *Results:* Basal turn HCs showed more intense GM fluorescence than middle turn HCs and very little GM uptake was observed in the apical turn when OC explants were exposed to GM 35uM for 48h. The differential uptake of GM across turns was not definite in the OC explants exposed to GM 50uM. The intensity of GM fluorescence was strongest in the 1st row of outer HCs, followed by 2nd and 3rd rows. The expression of GM was correlated with the damage of HCs in all cochlear turns and outer HC rows showing differential vulnerability of HCs. Interestingly, GM uptake was not expressed in HCs with weak staining of MyoVIIa and GM uptake was well correlated with the intensity of MyoVIIa expression. *Conclusions:* The differential vulnerability across cochlear turns in GM-induced hair cell damage is correlated with the differential uptake of GM and GM uptake may be dependent on MyoVIIa expression in HCs

2. Domestic Meeting

- **The 38th Annual Meeting of Korean Otological Society**
(Seoul: Apr 4-5, 2009)
“Atticoplasty: management of early cholesteatoma”
“UNHS; AABR, TEOAE”
- **The 3rd Workshop on the Airway Inflammation for Young Investigator**
(Seoul: Apr 4, 2009)
“Expression of MMPs and TIMPs by LTA from *Staphylococcus aureus* in normal human nasal epithelial cell”
- **The 83rd Annual Meeting of Korean Otolaryngological Society**
(Seoul: Apr 24-26, 2009)
“Pathogenesis of otitis media: what has been changed during past 30 years?”
“Effect of FM system in cochlear implant children “
“Prognostic factors for hearing gain after hearing aids “
“Intracellular mechanism of gentamicin-induced hair cell damage in neonatal rat organ of Corti“
“Affecting factors of users or non-users in cochlear implantations “
“The effect of Propolis on Mucociliary transport & Healing in Human respiratory mucosa”
“A case of aggressive NK/T cell lymphoma with oronasal fistula with pterygopalatine and infratemporal fossa invasion”
“A case of facial paralysis after endoscopic sinus surgery.”
“Analysis of spontaneous nystagmus in BPPV of lateral canalolithiasis”
“A case report of Melkersson-Rosenthal syndrome”
“Effect of epidermal growth factor in the progression of hypopharyngeal cancer“
- **13th Workshop on Health Effects of EMF and Bioelectromagnetic Environment**
(Seoul: Sep 3, 2009)
“The Effect of Electromagnetic Wave on Mucociliary Transport in Human Airway”
- **Otology-Neurotology Symposium**
(Seoul: Sep 3, 2009)
“Controversy in the treatment of E-tube disorder”
- **The 15th Korean Combined Congress of Otorhinolaryngology**

(Gyeongju: Oct 23-24, 2009)

“Clinical and pathologic features of melanocytic nevi of external ears”

“Three dimensional anatomy of the temporal bone in normal mice”

“Ginko biloba extracts, EGb 761 prevent cisplatin-induced hair cell death in rats (in vivo study)”

“The Effects of Lipoteichoic Acid of *Staphylococcus aureus* on MMPs & TIMPs in Human Middle Ear Epithelial Cell Line”

“The differential vulnerability across cochlear turns in gentamicin-induced hair cell damage is correlated with the differential uptake of gentamicin

“Clinical significance of Bondy operations in middle ear surgeries”

“Comparison of diagnostic validation: Electrocochleography vis. cochlear hydrops analysis masking procedure (CHAMP) in Meniere’s disease”

“The significance of 180° head rotation in head roll test for horizontal semicircular canal BPPV”

“Mechanism of apoptosis of inner ear hair cell line promoted by inflammatory cytokine”

“Effects of steroid therapy performed at outpatient clinic in treating SNHL patients”

“Correlation between preoperative tympanogram and perioperative status of ossicles in conductive hearing loss patient with intact ear drum”

“Expression and Clinical Significance of the NdrG-1 in Hypopharyngeal Cancer”

“A case of iatrogenic perilymphatic fistula in chronic recurrent otitis media patient”

“Two cases of maxillary sinusitis after reduction malarplasty with osteotome”

“A case of aggressive NK/T cell lymphoma accompanying erythema and necrosis of nasal dorsum”

- **Rhinology Update Symposium in 2009**

(Seoul: Nov 4, 2009)

“Treatment of allergic rhinitis based on new ARIA guideline”

- **The 6th Dong-A Hearing Symposium**

(Busan: Nov 7, 2009)

“Foreign body reaction in CI cases”

- **2009 Yonsei Vestibular Workshop**

(Seoul: Nov 14, 2009)

“Otolithic function test”

“Dynamic posturography”

- **The 19th Meeting of Korean Balance Society**

(Seoul: Dec 5, 2009)

“Comparison of diagnostic validation: Electrocochleography vis. cochlear hydrops analysis masking procedure (CHAMP) in Meniere’s disease”

“The significance of 180° head rotation in head roll test for horizontal semicircular canal BPPV”

GRANTS RECEIVED

- Development of regeneration techniques for chronic tympanic membrane perforations using novel nano-scaffolds releasing stem cell differentiation inducers and growth factors, funded by the Korea Health Technology R & D Project, Ministry for Health, Welfare & Family Affairs, Republic of Korea (A090869).
- Preventive effect of Korean red ginseng against aminoglycoside antibiotic-induced ototoxicity, funded by The Korean Society of Ginseng.
- Support for University professor’s course on visiting scholarship, funded by Bioscience Department in National Research Foundation of Korea.
- The inhibitory effect of electromagnetic wave on mucociliary transport in human airway and novel therapeutic drug research, funded by National Research Foundation of Korea.

AWARDS RECEIVED

- Intracellular mechanism of gentamicin-induced hair cell damage in neonatal rat organ of Corti - The best poster presentation at 83rd Annual Meeting of Korean Otolaryngological Society (Seoul: Apr 26, 2009)

EDUCATION

EDUCATION

Education activities in the department involve basic student education, post-M.D. residency education, patient education, and faculty participation in continuing educational programs both local and national.

Medical student education according to the curriculum and manual, classroom lectures up to 5th year are given using the symptom-oriented-disease approach and special behavioral objects (one semester - 30 hours). After completion of lectures, during 1 week, we contact medical students (5th grade) with clerkship. Basic physical examination and other diagnostic and therapeutic procedures are reviewed through the training period.

The residency program includes clinical practicum, instructional and research experiences. Also, we invite some professors of the other universities to present useful and upmost lectures.

The academic schedule for resident doctors is as follows:

Textbook Review: Provides an opportunity for the first-year residents to read, review, and discuss selected chapters from a major textbook in otolaryngology. Anatomy, Physiology and Pathology are stressed in the selection of material. Textbook review usually meets every morning 6:30-7:00 AM except Friday and Saturday.

Journal Club: Review current literatures in otology, rhinology, laryngology, head & neck oncology, neurotology and skull base surgery. Journal club usually meets every 2nd Monday evening 7:00-8:00 PM.

Case Conference: Opportunity to discuss interesting or/and problem cases with radiologist, pathologist and any other related department doctors. Case conference usually meets every 4th Monday evening 7:00-8:00 PM.

Case Preview: Gives the resident a thorough understanding of the disease and decision-making process for treatment by analyzing cases. Case preview usually meets every Monday evening 5:30-6:00 PM.

Case Review: Provides postoperative analysis of the total cases performed during last week. Case review usually meets every Monday evening 6:00-7:00 PM.

Topic Review: Allows the residents to prepare interesting and important topics by themselves to improve their presentation ability, and to help them to care for patients. Topic review usually meets every Saturday morning 10:30-11:30 AM.

Staff Lecture: Faculty members of the department have the chances to give lecture on their specialty to the residents. Sometimes doctors or professors from another university or institute are invited to give special lecture. This usually meets every 1st and 3rd Monday evening 7:00-8:00 PM.

Head and Neck Tumor Board: Provides an opportunity to review, discuss, and decide treatment plans of head and neck cancer patients with medical oncologists, radiation oncologists, radiologists, reconstructive surgeons, dentists and general surgeons. This usually meets 1st and 3rd Wednesday afternoon 12:30-1:30 PM.

Cochlear Implantation Conference: Provides an opportunity to review and decide CI treatment plans of bilateral deaf patients with otologists, audiologists, speech therapists, rehabilitation physicians, and social workers. This usually meets every 1st and 3rd Thursday afternoon 5:00 – 6:00 PM.

Rhinology Conference: Provides knowledge and an opportunity to study and discuss anathophysiology, pathophysiology, diagnosis and treatment of nose & sinus diseases. This usually meets on the 2nd Thursday of the month at 5:00 PM.

ENT Practitioner Meeting: Provides local practitioner with opportunity to obtain advises from colleagues on difficult cases, share clinical pearls and the state-of-the-art in ENT fields. This usually meet the 2nd Wednesday morning 7:30-8:30 AM of the months.

Introduction Course: Gives the new resident a thorough background in the anatomy, physiology and pathology of Otolaryngology and provides them a thorough understanding of the method of diagnosis, laboratory test, and methods of treatment of ENT diseases. This course usually meets the last week of February.

Dissection Course:

- Temporal bone dissection for the 3rd year residents.
- Neck dissection for the 3rd and the 4th year residents.
- Nose & paranasal sinus dissection for the 2nd year residents.

Thoroughly familiarize the participant with the intricate three dimensional anatomy of the human nose, neck and temporal bone, give them an opportunity to develop the skills necessary for live surgery via a hands-on-approach with close guidance and instruction in the temporal bone laboratory and department of Anatomy. The participant should gain a working knowledge of the application of the techniques for actual patient application. These courses

usually are held once a year. Temporal bone dissection course usually meets July of the year. Paranasal sinus and neck dissection courses depend on condition of the department of Anatomy.

Temporal Bone Histopathology Course: The resident doctors are required to understand the intricate three dimensional anatomy of the human temporal bone including the basic histological anatomy of the middle ear and inner ear as described in standard textbooks. The objective of this course is to thoroughly familiarize the resident with the detailed anatomy of the temporal bone before the surgical dissection. An effort will be made to correlate the various anatomical findings with diagnostic and surgical problems that arise in the otolaryngological area.

Ajou Otology Symposium: The 15th Ajou Otology Symposium was integrated with the last day program (May 10, 2009) of the 6th Extraordinary International Symposium on Recent Advances in Otitis Media which was organized by our department.

MEDICAL STUDENTS EDUCATION

Yun-Hoon Choung, D.D.S., M.D.

- Diseases of external, middle, and inner ear (Sep 10, 2009)
- Vertigo (Sep 17, 2009)
- Otoscope examination: lecture for polyclinical student (Feb 25, 2010)

Hyun Jun Kim, M.D.

- Anatomy & physiology of nose & PNS (Sep 3, 2009)
- Diseases of external nose and nasal cavity (Sep 3, 2009)
- Diseases of PNS, nose & PNS malignancy and Septorhinoplasty (Oct 11, 2009)

Hun Yi Park, M.D.

- Anatomy & physiology of hearing organ, Audiology, Hearing test, Rehabilitation of hearing (Aug 27, 2009)

Jin Seok Lee, M.D.

- Anatomy & physiology of larynx, Benign laryngeal disease, Vocal cord palsy, Bronchoesophagology (Oct 8, 2009)

- Diagnosis and treatment of head & neck tumor, Salivary gland disease, Infectious disease, Tonsil & adenoid disease (Oct 15, 2009)

RESIDENTS EDUCATION

Keehyun Park, M.D.

- Present status of middle ear surgery (Mar 12, 2009)
- Functional morphology of E-tube related to otitis media pathogenesis (Nov 30, 2009)

Yun-Hoon Choung, D.D.S., M.D.

- Managing intraoperative complication during middle ear surgeries (Aug 17, 2008)
- Clinical application of hearing aids (Jul 13, 2009)
- Functional tests of otolith system (Nov 9, 2009)
- Diagnosis and treatment of vestibular schwannoma – lateral skull base surgery (Nov 23, 2009)

Hyun Jun Kim, M.D.

- Treatment of allergic rhinitis based on new ARIA guideline. (Oct 19, 2009)

Hun Yi Park, M.D.

- Psycho-acoustics (May 28, 2009)
- Auditory function test (Aug 3, 2009)

Jin Seok Lee, M.D.

- Benign disease of salivary glands (Jul 6, 2009)

Jong Bin Lee, M.D.

- Treatment of Tinnitus (Sep 7, 2009)

Jung Yoon Mo, M.D.

- Diseases of external ear (Jul 20, 2009)

Sung Pyo Hong, M.D.

- Frontal sinus surgery (Aug 31, 2009)

OTHERS

Keehyun Park, M.D.

- Recent advances in pathogenesis of otitis media: Lecture for ENT practitioner in Shinchon area (Severance Hospital, Seoul: Mar 5, 2009)
- Recent advances in pathogenesis of otitis media: Lecture for ENT practitioner in Gangnam area (Gangnam Severance Hospital, Seoul: Mar 12, 2009)
- Pathogenesis of otitis media: what has been changed during past 30 years?: Lecture in Gwangju-Chonnam ENT Joint Conference (Gwangju Christian Hospital: Mar 24, 2009)
- Pathogenesis of otitis media: what has been changed during past 30 years?: Lecture in Taegu-Kyungbook ENT Joint Conference (Taegu Jace Hotel: Mar 26, 2009)
- Moderator at award lecture session of the 83rd Annual Meeting of Korean Otolaryngological Society(Grand Hilton Hotel, Seoul: Apr 24,2009)
- The present and the future of Ajou University Medical Center: Lecture in the 40th Suwon Women's University Memorial Seminar (Suwon: Dec 17, 2009)

Yun-Hoon Choung, D.D.S., M.D.

- Common otologic diseases in children : Lecture for residents in the Korean Pediatric Society (Daegu: Apr 23, 2009)
- OPD-based procedures for otologic diseases : Lecture for ENT practitioner in Suwon area (Suwon: Mar 11, 2009)
- Moderator at oral presentation session of Seven Departments Joint Meeting of Otolaryngology (Osaka, Japan: Mar 27-28, 2009)
- Biomechanics of sound : Lecture for students in the Ajou University School of Medicine, Graduate school (Suwon; Apr 8, 2009)
- Cochlear implantation : Lecture for medical students in College of Medical Science, Konyang University (Konyang University School, Daejeon; May 15, 2009)
- The role of connexins in cisplatin-induced apoptosis ; Presentation in Wonkwang Vestibulo-Cochlear Center (MRC) (Iksan: Jul 10, 2009)
- Endolymphatic sac decompression surgery : Presentation in Gyeonggi OGR (Bundang Cha Hospital, Bundang; Jul 24, 2009)
- Biomechanics of sound and balance: Lecture for students in the Department of Biosystems and Biomaterials Science and Engineering, Seoul National University, Graduate School (Seoul; Sep 30, 2009)

- ENT diseases : Lecture for students in Seoul National University, Dental College (Seoul National Dental Hospital, Seoul; Nov 3, 10, 2009)
- Foreign body reaction in CI : 6th Dong-A Hearing Symposium (Donga University Hospital, Busan; Nov 7, 2009)
- Otolith function test : Lecture in 2009 Yonsei Vestibular Workshop (Seoul; Nov 14, 2009)
- Diagnosis and treatment of dizziness : Lecture for ENT practitioner in Catholic University area (The Gangnam Catholic Hospital, Seoul: Mar 11, 2009)
- Giant cholesteatoma: Presentation in Gyeonggi OGR (Gacheon Gill Hospital, Incheon; Dec 3, 2009)

Hyun Jun Kim, M.D.

- The effect of electromagnetic wave on mucociliary transport in human airway: Presentation in Health Effects of EMF and Bioelectromagnetic Environment Meeting (Seoul: Jul 9, 2009)
- External nasal deviation following facial swelling: Presentation in Eight Medical Schools Joint Meeting (Catholic University Hospital, Seoul: Mar 5, 2009)
- Facial paralysis after endoscopic sinus surgery: Presentation in Gyeonggi OGR (Cheonan Sangrok Resort, Cheonan; Mar 23, 2009)

Hun Yi Park, M.D.

- Psycho-acoustics: Presentation in Training Course for Audiologists (Seoul: May 27, 2009)
- Subperiosteal abscess: Presentation in Eight Medical Schools Joint Meeting (Catholic University Hospital, Seoul; Sep 4, 2009)
- Traumatic external auditory canal obstruction: Presentation in Gyeonggi OGR (Suwon; Sep 25, 2009)

Jin Seok Lee, M.D.

- Carcinoma ex pleomorphic adenoma: Presentation in Gyeonggi OGR (Suwon; Aug 28, 2009)

VISITING PROFESSORS

Moon Sung Park, M.D.

- Professor, Department of Pediatrics, Ajou University College of Medicine, Suwon, Korea

“Immunization schedule”

Yoo-Sam Chung, M.D.

- Associate Professor, Department of Otolaryngology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea
- “Obstructive Sleep Apnea Syndrome”

Se-Heon Kim, M.D.

- Associate Professor, Department of Otorhinolaryngology, Yonsei University College of Medicine, Seoul, Korea
- “Robot-assisted surgery in the ENT fields”

Hee Young Kang, M.D.

- Associate Professor, Department of Dermatology, Ajou University College of Medicine, Suwon, Korea
- “Common Dermatologic Diseases of face and neck”

Jin Kook Kim, M.D.

- Associate Professor, Department of Otorhinolaryngology-Head and Neck Surgery, Konkuk University School of Medicine, Seoul, Korea
- “Anti-inflammatory effects of NAG-1 in a mouse model of Dss-induced colitis”

Ho Sung Kim, M.D.

- Assistant Professor, Department of Radiology, Ajou University College of Medicine, Suwon, Korea
- “Radiological diagnosis in the ENT fields”

Chan Bae Park, M.D.

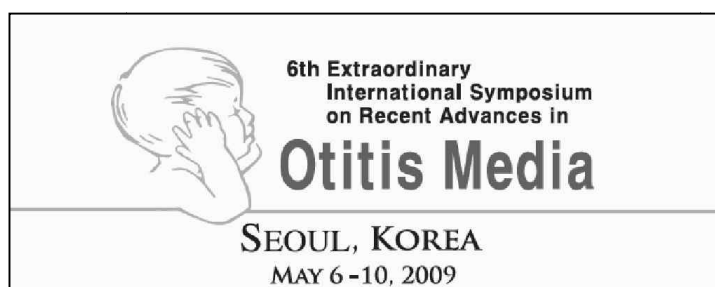
- Assistant Professor, Institute of Medical Science, Ajou University College of Medicine, Suwon, Korea
- “Transgenic mouse & clinical application”

Shi-nae Park, M.D.

- Associate Professor, Department of Otorhinolaryngology, Catholic University College of Medicine, Seoul, Korea

6th Extraordinary International Symposium on Recent Advances in Otitis Media

- President: Keehyun Park
- Guest of Honor: Steven K. Juhn (USA)
- Vice President: Hong-Joon Park
- Organizing Committee Chair: Yun-Hoon Choung
- Scientific Committee Chair: Young-Myoung Chun
- Organized by: Department of Otolaryngology, Ajou University School of Medicine / Soree Ear Clinic
- Integrated with the 15th Ajou Otology Symposium
- Venue: Lotte Hotel Seoul, Seoul, Korea: May 6-10, 2009
- Brief Review of Scientific Programs
 - Keynote Lecture: David J. Lim (USA)
 - Guest of Honor Lecture: Steven K. Juhn (USA)
 - Special Lectures: Hiroshi Kiyono (Japan), Allen F. Ryan (USA), Michael M. Paparella (USA)
 - Invited Lectures: Mark P. Haggard (UK), Anne G.M. Schilder (The Netherlands), Margaretha L. Casselbrant (USA), Lauren O. Bakaletz (USA), Noboru Yamanaka (Japan), Kenji Suzuki (Japan), Toshimitsu Kobayashi (Japan), Michal Luntz (Israel), Richard M. Rosenfeld (USA), Yukiko Iino (Japan), Joo-Heon Yoon (Korea), Timothy T.K. Jung (USA), Haruo Takahashi (Japan), Malou Hultcrantz (Sweden), Sten O.M. Hellström (Sweden)
 - Symposium I (Vaccines against OM : Current status), Symposium II (The possible role of TLR in defense system of middle ear), Symposium III (Ion transports in middle ear mucosa), Symposium IV (Perpetual burden of otitis media & prospects for prevention), Symposium V (Surgery for chronic otitis media)
 - Three Luncheon Symposiums
 - Oral Presentations: 85
 - Poster Presentations: 104
 - Panel: "Management option for otitis media" - Richard Rosenfeld (USA), Timothy T.K. Jung (USA), Bradley Welling (USA), Hideyuki Kawauchi (Japan), Haruo Takahashi (Japan), Yang-Sun Cho (Korea), Hyun Ho Lim (Korea), Carsten Dalchow (Germany), Tuncay Ulug (Turkey), Masafumi Sakagami (Japan)



PATIENT CARE

Outpatient Visits	Total	50,223
include	New	15,289
	Old	34,934
Inpatients		2,576
Emergency Room Visits		1,348
Operative Cases (procedures)	Total	2,930(6,540)
include	Ear	951(1,364)
	Nose	829(3,485)
	Head & Neck	1,150(1,691)
Audiology	Total	13,697
include	Pure tone audiogram	6,603
	Impedance audiogram	1,679
	Tinnitusgram	356
	Brainstem evoked response audiometry	399
	Speech audiogram	3,845
	Otoacoustic emission	637
	E-tube function test	178
Hearing Aids		131
CI Mapping		183
Vestibular Function Test		9,065
Vocal Dynamic Laboratory		295
Speech Therapy		1,647
Allergy Clinic		537
H & N Clinic		551

All totals are for the period Mar 1, 2009 through Feb 28, 2010

Operative Procedure	Total	1,364
Ear		
V-tube Insertion		417
Cochlea implantation		19
Canaloplasty/meatoplasty		9
Tympanomastoidectomy		
Atticosinoplasty		21
Simple mastoidectomy		29
Intact canal wall mastoidectomy		66
Open cavity mastoidectomy		115
Radical mastoidectomy		0
Modified radical mastoidectomy		1
Revision mastoidectomy		3
Myringoplasty		26
Tympanoplasty		221
Ossiculoplasty		
With mastoidectomy		134
Stage operation(only)		61
Stapedotomy		6
Explo-tympanotomy		12
Removal of congenital cholesteatoma		27
Mass excision		
Preauricular sinus		84
Branchial cleft cyst		9
EAC mass		3
Sebaceous cyst		0
Others		31
Facial nerve decompression		0
Lateral skull base surgery		
Middle fossa approach		0
Translabyrinthine approach		1
Lateral temporal bone resection		1
Subtotal petrosectomy		1
Total petrosectomy		0

Infratemporal fossa approach	0
Osseointegrated implantation	
BAHA	1
Epithese	0
Others	
Facial nerve graft	0
Auricular amputation	0
Skin graft	1
Freign body removal	5
Myringotomy	18
Patch apply	1
Dental roll apply	2
Others	26

Nose	Total	3,485
Endoscopic sinus surgery		
Middle meatal antrostomy		534
Ethmoidectomy		532
Frontal sinotomy		467
Sphenoidotomy		119
Polypectomy		23
Septoplasty		382
Septorhinoplasty		
Closed		7
Open		34
Maxillectomy		
Medial		0
Radical		0
Turbinate surgery		
Conchotomy		1140
Turbinectomy		3
Caldwell-Luc operation		3
Mass excision		
Excisional biopsy		0
Snoring surgery		
LAUP		0
UPPP		46
Uvulectomy		6
Others		
Bleeder ligation		11
Closed nasal bone reduction		51
Foreign body removal		0
Intranasal antrostomy		79
Transsphenoidal approach		14
Others		9

Head & Neck	Total	1,691
Tonsillectomy/adenoidectomy		
Tonsillectomy		383
Tonsillectomy & adenoidectomy		484
Adenoidectomy		60
Bronchoscopy		
Diagnostic		3
Foreign body removal		4
Esophagoscopy		
Diagnostic		1
Foreign body removal		3
Frenotomy		48
Incision and drainage		6
Mass excision		
Triple endoscopic biopsy		0
Neck mass(Excision)		79
Sistrunk operation		14
Salivary gland surgery		
Lithotomy		5
Marsupialization		24
Mucocele/ranula excision		49
Submandibular gland excision		29
Parotid gland excision		
Superficial		40
Subtotal		2
Total		3
Thyroid surgery		
Hemithyroidectomy		5
Total thyroidectomy		7
Laryngeal surgery		
Benign lesion(Laryngomicrosurgery)		155
Malignant lesion		
Laser codectomy		18
Supracricoid laryngectomy with CHEP		0
Supraglottic partial laryngectomy		1
Total laryngectomy		6

Total laryngopharyngectomy	0
Total laryngopharyngoesophagectomy	0
Thyroplasty	
Restylane injection	0
Type I thyroplasty	3
Tracheal surgery	
Tracheostomy	120
End-to-end anastomosis	1
T-tube insertion/removal	9
Stomoplasty	7
Primary tumor wide resection	
Buccal cancer	0
Lip cancer	0
Tongue cancer	1
Soft palate cancer	0
Tonsil cancer	0
Skin cancer	1
Nasal cavity / sinus cancer	0
Others	1
Neck dissection	
Extended radical	0
Radical	5
Modified radical	0
Lateral	19
Supraomohyoid	8
Extended supraomohyoid	2
Central	2
Reconstruction	
Regional flap	
Gastric pull up	0
Pectoralis major myocutaneous muscle	1
Free flap	
Forearm	1
Lateral thigh	4
Rectus abdominis	0
Jejunum	0
Ileocolic	0

Others

Bleeder ligation	10
Primary closure	8
Explo-neck	2
Others	22

FACILITIES AND EQUIPMENTS

1. OUTPATIENT CLINIC

1) ENT unit and chair

Reliance (Models 425/ 525)) -----	1
Reliance (Models 7000LFC/HFC) -----	2
Nagashima EMC-II Chair -----	5
Nagashima (Models SN-Excellence A type) -----	5
Color printer GV-DT77(Victor)	3
C.C.D. Camera C-44 (Toshiba)	4
C.C.D. Adaptor IK-C44H13 (Toshiba)	3
LCD Monitor (Samsung)	4
Medical video recording system (MURS 3000)	3
C.C.D. Camera Telecam NTSC (Storz)	1
C.C.D. Adaptor (Storz)	1
Microscope SN-100 (Nagashima)	2

2) Audiological Laboratory

Audio Booth -----	3
Single room (Delta 143-A)	1
Double room (RS 253-B)	1
Audiobooth (Kwangwoo Medics)	1
Pure Tone Audiometry -----	2
Madsen Orbiter 922 version 2	1
Aurical Plus	1
Samsung SyncMaster Magic CX943B	1
Samsung CLP-315K	1
Otoacoustic Emission -----	1
ILO v6	1
Samsung Sens laptop p510	1
Auditory Brain Stem Response Audiometry -----	1
Navigator (Bio-Logic)	1
Biologic Samtron monitor	1
Hewlett Packard paintjet	1
Impedance Audiometry -----	2
Madson Otoflex 100	1
Madson Zodiac 901	1
GSI Audio Screener -----	1
Cochlear Mapping -----	3
Nucleus	1

	Samsung Syncmaster Magic CX713T	1
	Medel	1
	Samsung Syncmaster Magic CX713T	1
	Clarion	1
	Samsung Sens V20 laptop	1
	Auditory Steady-State Response / Vestibular Evoked Myogenic Potential / Cochlear Hydrops Analysis Masking Procedure / BioMAP / stacked ABR--	1
	Auditory Evoked Potential System(Bio-Logic)	1
3) Vestibular Function Laboratory		
	Rotation Chair System (Micromedical Technologies INC.) -----	1
	Rotatory chair (System 2000)	1
	Controller (Model 300)	1
	Samsung sync master 179E	1
	Intercom (Samsung 486 Green Computer)	1
	Hewlett Packard Laserjet 4	1
	SLVNG: 3D VNG Mono-oculography system (SLMED) -----	1
	Splendive II goggle	1
	LG superslim TV	1
	Dell Dimension E520	1
	Hewlett Packard Laserjet printer	1
	Easy-eyes: Video Eyes Movement Recorder System(SLMED) -----	1
	Splendive II goggle	1
	Dell Dimension E520	1
	Posturography system (Synapsys) -----	1
	Samsung Magic Station M940	1
	Balance plate	1
	Hewlett Packard Deskjet printer D5560	1
	Water caloric stimulator NCI-480 (ICS Medical) -----	1
	Subjective visual vertical and horizontal system-----	1
	Trigem Dreamsys Office	1
4) Vocal Dynamic Laboratory -----		1
	Lx strobo system	1
	Laryngography processor	1
	3 chip CCD camera	1
	LCD monitor	1
	Hewlett Packard printer	1
	Mobile Cart	1

	Speech studio	1
	CSL 4500(KAY)	1
	LCD monitor	1
	Hewlett Packard printer 5560	1
	Nasometer II 6400 (KAY)	1
	Aerophone II	1
5)	Low Power Laser (Felas Medical Laser HN12) -----	1
6)	Emergency kit -----	1
7)	Autoclave -----	1
8)	Operating microscope -----	2
	Carl Zeiss OMPI 111	1
	Carl Zeiss OMPI 99	1
9)	Nebulizer -----	1
10)	OES Video System -----	1
11)	Visual Education System -----	1
	CCD camera (Toshiba)	1
	Camera control Unit (Hitachi)	1
	Sony digital video adapter (XV-D300)	1
	Telecam (Storz NTSC)	1
	VCR (Panasonic SVHS, AG-7350)	1
	Color monitor (Sony Trinitron)	1
	Color printer (Sony Mavigraph)	1
12)	Camera system -----	3
	Nikon F801S	1
	Fuji Finepix S2pro	1
	Nikon CoolPix 4500	1
13)	Video Camcorder -----	1
	Sony DCR-TRV17	1
14)	Plastic Model -----	3
	Skull	1
	Larynx	1
	Ear	1
15)	Surgical coagulator -----	1
	Surgical unit, electric (Valley Lab)	1

2. OPERATION ROOM

Frenotomy set	1
Tonsillectomy set	4
T et A set	3
ENT prep.	3
Tympanoplasty set	4
Tympano micro set	3
V-tube set	3
Stapes set	1
Specular holder set	1
Cochlear implant set	2
Cochlear implant supplement set	1
Head rest set	1
Tracheotomy set	1
Transtemporal supra-labyrinthine approach set	1
Microsurgery set	1
Nasal basic set	4
Nasal dressing set	4
Nasal bone set	1
Nasal bone supplement set	1
Closed-Reduction set	1
Submucous resection set.	3
Septorhinoplasty set	2
Intranasal antrostomy set.	2
Caldwell set	2
Antral douche set	2
Tracheostomy set	1
Excision set	2
Excision supplement set	2
Laryngectomy set	1
Endoscope set	2
Operating microscope (Zeiss)	3
OMPI-CS-I S4	
5PMICSI-S4(Combilux)	
OMPI S21	
Stealth station navigation (Medtronic)	
EG0005	1

Drill system surgical		
	APS (Xomed-Treace)	2
	MPS-2000 (Xomed-Treace)	2
	High speed drill (Medtronic)	1
	Stapes drill (Skeater)	1
Otoscope(Karl-Stroz)		1
Endoscopes		
	Esophagoscope set	2
	Bronchoscope set	2
	Adult set	1
	Child set	1
	Laser Bronchoscope set	1
	Laryngoscope set	2
Surgical head light system		2
	Karl-Storz	2
Xenon light source (Karl-Storz)		1
Nerve monitoring system (NIM2)		1
LASER system		1
	Carbon Dioxide	1
Visual education system		2
	3CCD camera & VCR system	1
	Color monitor (Sony)	1
Debrider		
	XPS 2000 (Medtronic Xomed)	1
	XPS 3000 (Medtronic Xomed)	1
	DIEGO (GYRUS ACMI)	1
Molecular resonance generator		
	Vesalius LX80 (TELEA electronic eng.)	1

3. OFFICE AUTOMATION SYSTEM

Computer system & printer		
	32 bit IBM PC (Pentium4)	4
	Hewlett Packard scanjet 3C	1
	Laser printer IIG	1
	Macintosh LC/475	2
	Power Macintosh 7500/100	1

	Printer (Epson stylus Photo EX3)	1
	Printer (HP Laser Jet 5000LE)	1
	Printer (Sindo Ricoh Blackfoot LP 1900e)	1
	Scanner (Epson Perfection 1240U)	1
	Scanner (Epson Perfection 3200PHOTO)	1
	QMS 1660E Printer system	1
	Print Server(D-Link DP-300U)	1
Projector (Kodak)		2
	5600 KK	1
	4600 KK	1
Overhead projector (3M)		1
Beam Projector (Sindo Ricoh)		1
	Mrp-x12	1
Laser indicator		5
Copy machine		
	(Korea Xerox XK-392)	1
	(Sindo Ricoh NT-4040)	2
	(Lotte Canon LC 6025M)	1
Video system		1

4. LABORATORY

Light Microscope (Olympus)	3
Microscope WILD M651 (Leica)	1
Microscope (Carl Zeiss 400120)	2
Microprobe(Fischer Biotech)	1
Temporal bone dissection set	1

5. VIDEO LIBRARY

Application of the contact laser in otorhinolaryngology and head & neck surgery	
Allergy in house dust mite	
Canal reconstruction procedure (Penrose production)	
Diffuse exostosis & osteoma of the external auditory canal	
Facial nerve surgery (Jack L. Pulec)	

Facial nerve & chronic ear surgery (James L.Sheehy)

Interactive trip in otology (R. Vincent)

IONOS Middle ear prosthesis operation

Keratosis obturans (James L. Sheehy)

KTP/ 532 Laser system in otorhinolaryngology

Laser engineering Inc.

Laser assisted uvulopalatoplasty

Meniere's disease (Schuknecht)

Microsurgery of the skull base (U. Fisch)

Nasal allergy

Nerve integrity monitor (Xomed-Treace)

Nystagmus & caloric test analysis flexibility (Micromedical technologies)

Provox (J.M. Hilger, J.M. Balm)

Reconstruction of the ossicular chain (G. Geyer)

Sinus surgery

Stapes fixation (U. Fisch)

Stapedectomy (Schuknecht)

Sinojet (ATOS)

Swift Laser system for office ENT procedures (LAUP, tonsils, turbinates)

Surgical anatomy of the temporal bone(Mario Sanna)

1. Surgical anatomy of the temporal bone (part I)
2. Surgical anatomy of the temporal bone (part II)
3. Topographic anatomy of the temporal bone
4. Surgical anatomy of the lateral skull base,
The infratemporal fossa approach A
5. The infratemporal fossa approach B & C
6. The enlarged translabyrinthine approach
7. Middle fossa approach, etc.
8. The system of the modified transcochlear approach (part I)
9. The system of the modified transcochlear approach (part II)
- 10.The system of the modified transcochlear approach (part III)

Surgical technique of the temporal bone & skull base (Silverstein, Rosenberg)

- 1.Instrument set-up, etc.
- 2.Laser stapedotomy
- 3.Tympanoplasty
- 4.Revision mastoid-tympanoplasty
- 5.Combined retrolabyrinthine/retrosigmoid vestibular neurectomy

6.Singular neurectomy, Acoustic neuroma

Temporal bone dissector (N.H. Blevins)

The 5th international symposium on recent advances in otitis media (T.Kumazawa)