Biography of Shigeru Hirano

Shigeru Hirano is a distinguished head and neck surgeon and scientist dedicated to laryngology and head and neck oncology. He graduated from Facutly of Medicine, Kyoto University, Japan, in 1990, and initiated his career as head and neck surgeon. After achieving the thesis of PhD. in Graduate School of Medicine in Kyoto University in 1998, he served as the Assistant Professor at Kyoto University, and then worked as visiting scholar at UCLA in the US in 1999-2000, University of Wisconsin-Madison in the US in 2001-2003 for the research on Laryngology. After coming back to Japan, he was assigned the Associate Professor, and then the Professor and Chair at the Department of Otolaryngology Head and Neck Surgery in Kyoto Prefectural University of Medicine in 2016.

His main research work in Laryngology is tissue engineering and regenerative medicine for vocal fold scar and atrophy. Vocal fold scar and atrophy is the most difficult pathologies to treat, and he initiated the regenerative approach to overcome the diseases as the pioneer in the world. He has developed several regenerative tools including scaffold, growth factor, and stem cells. He has first confirmed the regenerative potential of atelocollagen sheet and collagen-gelatin compound, and applied the materials to the patients with vocal fold scar with encouraging results. He then developed growth factor therapy using basis fibroblast growth factor (bFGF) and hepatocyte growth factor (HGF). Basic FGF has proven to be useful for the regeneration of the vocal fold in case of mild scar, in mean time, stronger anti-fibrotic HGF has been developed by phase I/II clinical trial in Japan, and phase III trial is now under way. He also researched stem cell therapy using mesenchymal stem cell (MSC) by in vitro and in vivo settings.

He made a lot of key note lecture or plenary lecture with the superb achievements at ICVPB (International Conference on Vocal Physiology and Biomechanics) 2008, ALA (American Laryngological Association) 2016, IFOS (International Federation of Otolaryngology Society) 2017, TERMIS (Tissue Engineering Regenerative Medicine International Symposium) 2018, and IAP (International Association of Phonosurgery) 2022.

He has been working on head and neck oncology focusing on function-preservation therapy for advanced head and neck cancers. He has developed induction chemotherapy using molecular target drug, immunotherapy for recurrent cancers, and photoimmunotherapy (PIT). PIT is the most recent innovative treatment for advanced cancers, which has been applied to patients since 2021. PIT is a quite new therapy different from any other cancer therapy including radiotherapy, chemotherapy, or immunotherapy. He is now working for global phase III clinical trial of PIT combined with immunotherapy.

He has also been working on maintenance and sustainability of throat function including voice and swallow. It has been said to be very important to keep the function to keep healthy life in elderly. Particularly, dysphagia is the severe problem for elderly, and often

becomes life-threatening. He has indicated that oxidative stress has a high impact of this aspect, and antioxidant should be very important to maintain the function. He also made a lot of achievements on regenerative therapy for dysphonia and dysphagia.

He is the top runner in the world in several important medical fields such as otolaryngology, oncology, regenerative medicine, anti-aging medicine, and sustainability medicine.