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8K Ultra-high Definition (UHD) endoscope: A probable game-changing eye for pediatric surgery

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We could successfully develop a handy 8K ultra-high definition (UHD) camera which was combined with an optically advanced rigid endoscope and an 85-inch 8K UHD display. For the past 3 years, we have clinically performed endoscopic cholecystectomy uneventfully in a total of 6 adult patients having symptomatic gallstone disease. The 8K UHD imaging could give us a visual acuity of 4.27 and a 16-fold higher resolution (33,000,000 pixels) as compared with that of a currently employed 2K high definition (HD) imaging (2,000,000 pixels). In our clinical practice, the 8K UHD endoscope offered surgeons an outstanding quality of vision with a sense of presence as well as a feeling of real solid things with detailed pin-sharp, true-to-life, and 3-D like images. Importantly enough, these imaging qualities are sure to enable us much more sharp accurate procedures including dissection or anastomosis of minute blood vessels or nerve fibers. We should emphasize here that these capabilities are required most to accomplish surgical intervention for susceptible fragile tissues of small pediatric patients. There are still a couple of problems to be overcome, the 8K UHD endoscope is sure to be quite promising technology for general along with pediatric surgery which should be safer, faster, and less expensive.

Biography

Toshio Chiba graduated from Tohoku University School of Medicine in 1975. In 1978, he worked as a Research Fellow at the Institute for Protein Research, Osaka University. He was a Visiting Assistant Professor/Clinical Fellow in the Division of Pediatric Surgery, University of Pittsburgh in 1986. In 1992, he was a Lecturer/Associate Professor, Division of Pediatric Surgery, Tohoku University Hospital. He worked as a Visiting Assistant Professor/Visiting Professor/Senior Scientist, Fetal Treatment Center, Department of Surgery, UCSF in 1997. In 2001, he was the Director of Department of Strategic Medicine, National Center for Child Health and Development. In 2012, he was a Chairman at the Medical Imaging Consortium. In 2013, he was a Professor at the University of Tokyo and in 2015, he was a Professor at the Nihon University. In 2017, he became CEO of Kairos Corporation. His research interests include Fetal Surgery and Pediatric Surgery.

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