

Laudatio to Prof. Masatoshi Makuuchi, honorary member of ESOT – Prague 2007

doi:10.1111/j.1432-2277.2008.00671.x

Dear President, dear Chairmen, dear Members, dear Friends, Ladies and Gentlemen,

It gives me great honour and pleasure to introduce you to the first Asiatic honorary member of ESOT: Masatoshi Makuuchi. Professor Makuuchi was born on August 12, 1946 in Tokyo, Japan. He grew up in an exemplary surgical family; indeed, his father was a classic general surgeon covering all fields of surgery including urology, gynaecology, and even orthopaedic surgery. His elder brother Hiroyasu is university professor of surgery specialized in oesophageal surgery and his younger brother Haruo is professor in cardiovascular surgery. I have, by the way, the recollections to recognize such a privileged situation.

His distinguished career began with his medical training at the Faculty of Medicine, Tokyo University between 1967 and 1973. His studies were interrupted when a student strike resulted in closure of the university. In 1979, he was appointed Chief Surgeon in the Hepatobiliary Division of the National Cancer Centre Hospital in Tokyo under the lead of his Mentors Professors Hasegawa and Yamasaki.

In 1989, he was appointed as Professor and Chairman of the Department of Surgery at Shinshu University.

In 1994, he returned to Tokyo where he was appointed as Chairman of the Second Department of Surgery and professor and surgeon-in-chief of the Division of Hepatobiliary and Pancreatic Surgery at the Graduate School of Medicine, University of Tokyo. In 1997, he became chief of the Artificial Organ and Transplantation Division. He was also Director of the Department of Surgery at Tokyo University Hospital and Director of the Organ Transplantation Service. Since May 2006, he has been the director of the Japanese Red Cross Hospital. This position will enable him to further develop the fields of liver surgery, especially that of living donor liver transplantation.

The designation of the departments in which he was appointed, clearly underline his interests in hepatobiliary and pancreatic surgery as well as in the development of artificial organ replacement for the failing liver and especially in liver transplantation.

Professor Makuuchi is a member of and councillor for several different scientific societies. He is the President of

the International Association of Surgeons and Gastroenterologists and is a member of the Executive Committee of the Japanese Surgical Society and International Surgical Society. He was President of the Liver Cancer Study Group of Japan during 2001 and 2002 and of the Japanese Surgical Society in 2005. His presidential 'leitmotiv' was 'from innovative ideas to clinical evidence'. This 'leitmotiv' reflects very well his personality. He has been an honorary member of the European Surgical Association since 2003. He is also an honorary member of the American Institute of Ultrasound in Medicine and the Czech Surgical Society. He has held several honorary professorships in China. He is also a member of the board of several internationally renowned Journals.



Professor Makuuchi has won several notable prizes including an award from the Princess Takamatsu Cancer Research Fund and the Tamiya Memorial Prize from the Foundation for Promotion of Cancer Research in Japan.

He is the author of more than 500 articles published in English. In addition to this extensive scientific activity, many publications have also been published in Japanese. He is the author of several seminal books in liver surgery and transplantation.

His father indeed had told him, at the time of starting his medical career, that hard work and proficiency in English are far more important than earning the highest degrees and diplomas!

During his long and illustrious career, Prof. Makuuchi has had a very important interest in relation to the safety of liver surgery and liver transplantation in patients with impaired liver, both non cirrhotic and cirrhotic diseased patients. The development of this highly specialized surgery was founded on an extraordinary knowledge of anatomy, and also ultrasonography, 'the third eye at the fingertips of the surgeon'. The principles of ultrasonography allowed finally defining much better, the pure anatomical description of the liver segmentation described earlier by Prof. Claude Couinaud from Paris in the 1950s. This knowledge was applied, almost 20 years later, in the development of several original methods such as the ultrasonic-guided (sub)segmentectomy and the development of new hepatectomy procedures for the resection of liver cancer in the context of a resection of a right hepatic vein and with the imperative to spare and ensure preservation of inferior right hepatic veins. He further developed original methods of liver resection such of central bi-segmentectomy and isolated resection of segment I. In fact, with his surgical skills, nearly all liver lesions became resectable! All these parenchyma-sparing interventions have been aimed at simultaneously obtaining an optimal outcome in surgically treated cirrhotic patients with a reduced liver function, and avoiding liver transplantation in a region where postmortem organ donation is rather exceptional. Liver surgery has been professionalized to become child's play for adult surgeons! His expertise is highlighted by the fact that there has been, in his department, not a single mortality in a series of more than 1000 partial hepatectomies performed in cirrhotic patients. Thus, the concept of 'no-mortality hepatectomy' had been born. The fundamentals of the 'no-mortality hepatectomy' are the following ones: perfect technical realization of the surgery, use of intra-operative ultrasound, evaluation of hepatic functional reserve. use on inflow-occlusion techniques and precise volumetric analysis. I request your particular attention for this last sentence, keep it in mind. All the principles of ultrasonically guided surgery, restrictive use of blood products and very

precise surgical anatomy and anatomical surgery, together with the development of all modern twentieth century technologies, had been applied in the field of living donor liver transplantation.

As a matter of fact, he was the first in the world to perform a living-related liver transplantation between adults. This landmark paper was published in the *Lancet* in 1994. A patient with primary biliary cirrhosis was successfully transplanted using the right lobe of her son. This first living-related liver transplantation between adults was the heralding of a new era in liver transplantation.

Although left lateral segmentectomy or left lobe living donor liver transplantation had already been practiced in the field of paediatric liver transplantation some years before by the teams of Prof. Broelsch in Chicago and Tanaka in Kyoto, one can realize that this method does not represent a real expansion of the liver donor pool in the established transplant countries. Indeed, the shortage of livers for small children can be solved easily -with similar results- using left lobe split liver transplantation, and moreover less than five per cent of all potential liver recipients are children. The problem of liver allograft scarcity will thus always remain very important in the field of adult liver transplantation. Therefore, opening the door to the safe use of this procedure in adults represents a real expansion of the liver pool. It became clear in a very short period that these operations, done between adults, were also much more risky. In order to guarantee a maximal safety to the liver donor as well as to the liver recipient, Prof. Makuuchi applied his extensive experience of all possible hepatectomy techniques to the living donation liver transplantation.

So living donor liver transplants were done including segments II and III, this means a left liver lobe; segments II-III and IV, this means a left liver; segments I-II-III and IV, this means a whole left liver; segments V-VI-VII and VIII without and with median hepatic vein representing a right or right extended liver and even grafts only including segments VI and VII, also called right posterior graft, were all proven to be safe donor and recipient procedures! The feasibility of all these anatomical liver resections was further established by drawing on technical developments, all witnessing his extreme surgical skills and ingenuities. The results that he has demonstrated are really extraordinary, approaching an impressive 95% graft survival!!

The most important point in the development of living donor liver transplantation is the safety of the donor. I remind you that elevation of bilirubin to more than 1.5 times the normal value is considered, in his department, to be a complication of donor surgery!

To give you an idea about such an achievement, 27% of all living related liver transplantations, registered in the

audited ELTR-database, had bilirubin elevations after donor hepatectomy above three times normal values.

Many European liver- and liver transplant surgeons have had the opportunity to visit his department and to learn from his expertise in order to bring improvements in the care of our own patients. In this way, Prof. Makuuchi has contributed greatly to the knowledge of liver surgery and living donor liver transplantation in Europe.

I am very proud to say that the ESOT council decided unanimously to give honorary membership of ESOT to Prof. Makuuchi for the whole of his entirely exemplary surgical career, his engagement towards both donor and recipient liver patients and their families, and for all his

dedication during the last two decades in the field of liver transplantation. He is a real Goliath in the field of liver surgery and transplantation.

Professor Masatoshi, congratulations for your ESOT honorary membership!

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