



Liver Surgery, from Labor to Operating Theatre: How Far Can we Go?

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Editorial

It is true that the liver is the human organ that has fascinated human thoughts and arts since ancient Greek history. The myth of Prometheus whose liver was eaten during the day and regenerating during the night as punishment by the Gods was the initial reference of the magical potential of liver regeneration. However, it took some thousands of years [1] for the scientists to study the anatomy of the human liver (Andreas Vesalius) and to perform the first elective hepatectomy (Carl von Langenbuch, first elective hepatectomy in 1887 for a tumor of the left liver lobe weighing 370 mg). Sir Thomas Pringle proposed his famous maneuver to stop the bleeding for liver trauma, while today Pringle's maneuver is performed as a vascular occlusion modality in elective liver surgery in order to minimize intra-operative bleeding.

The late Thomas Starzl was the first liver surgeon who estimated the great significance of basic research and experimental animal surgery focusing on immune suppression and standardizing his surgical technique in liver transplantation and transferred his experimental experience in clinical practice and surgical performance [2]. Thus, Thomas Starzl has become the father of orthotopic liver transplantation. Furthermore, liver regeneration has been the fascinating and provocative object of basic research for many years in many centers and for many scientists. The very important finding and clinical observation that the initial triggering point for liver regeneration is liver ischemia has created a revolution for liver surgery. Portal Vein Embolization and Portal Vein Ligation have been introduced as ischemic impulses in order to create ischemia of the lobe to be resected and hypertrophy for the lobe to be remained. The increase of the remnant liver volume has allowed us to perform extended hepatectomies for primary or secondary liver tumors, raising the life expectancy for many patients suffering from these tumors even with underlying liver disease. Furthermore, in situations where liver ischemia is not wanted as it happens in living donor liver transplantation, experimental studies [3] have offered other modalities to augment liver function, such as $\omega 3$ fatty acids.

Arriving at a time where extended hepatectomies and living donor liver transplantation are widely accepted and performed with great success, one could believe that liver surgery has reached its frontiers. However, the introduction of Associating Liver Partition and Portal Vein Ligation for Staged Hepatectomy (ALPPS) [4] has opened new horizons in liver surgery. Beside that the introduction of ALPPS has taught us a lesson: as far as clinical observation and basic science are combined it would be very difficult for someone to predict limits and frontiers in medical achievements. While ALPPS is trying to get standardized genetic medical practice and surgery is in front of our doors.

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