Meet the Professor

Professor Henri Bismuth: the past, present and future of hepatobiliary surgery

Vicky J. He

Submitted May 15, 2013. Accepted for publication May 30, 2013.
doi: 10.3978/j.issn.2304-3881.2013.07.01
Scan to your mobile device or view this article at: http://www.thehbsn.org/article/view/2322/3494

As a pioneer and renowned international expert in the hepatobiliary field in the early 70's, Professor Henri Bismuth (Figure 1) was one of the few surgeons in the world (and the first in France) to launch a hepatic transplantation program. In 1993, he set up the first transplant center in France and among the first one in Europe, the Hepatobiliary Center at the Paul Brousse Hospital in Villejuif. Throughout his career, Prof. Bismuth has helped to set up and to develop new liver transplant techniques such as the split liver technique, which allows two patients to be transplanted with only one liver. He has received honorary degrees from the Universities of Turin, Porto, Coimbra, Warsaw and honorary membership from the American College of Surgeons, the American Surgical Association and from many other international medical societies.

Figure 1 Henri Bismuth

HBSN: We know that there were not many liver surgeries being performed before 1980's. Could you comment on the reason why people did not do hepatobiliary surgeries at that time?

Prof. Bismuth: Hepatobiliary surgery is a young field when compared with other surgical fields in general surgery. Before 1980s, there were very few cases of liver resections, for instance, resection for tumors. Hepatectomy is the main treatment choice for liver tumors nowadays. It was, however, difficult when there was no imaging technique before ultrasound appeared. There was no way to find out the small tumors in the liver which were easy to be removed. When the patients with liver tumors presented at clinic with jaundice, usually the tumor was too large to be removed easily. That means at that time there were only very few cases of liver surgery being performed, and usually were major liver resections with higher morbidity and mortality. When ultrasound, the first imaging technique before CT, appeared in early 1980s, the development of liver surgery has been really started. We were then able to receive patients with small tumors, and anatomical segmental resection become possible. Since then, more and more liver resections have been done with the developments of new surgical techniques, new managing approaches, and new adjuvant therapies. After three decades, this field grows.

HBSN: Many surgical doctors view you as a "living legend". You have actually evidenced the development of hepatobiliary surgery, and been a pioneer and the leader in this field across the world. Could you give us a brief view of the development of hepatobiliary surgery?

Prof. Bismuth: In the first two decades since the 1980s, there were many technical descriptions. The technique of liver resection has been improved a lot, and we have achieved a very good advanced hepatectomy approach. But the progress in liver surgery in the last decade was mainly what we called the adjuvant treatment, which is a

treatment to increase the feasibility and possibility of the patient to be operated on. Even today, the only possible curative method to treat the liver cancer is liver resection. If we do not remove the tumor, that is what we call radical liver resection, we can be sure that the patient has no way to be cured. The adjuvant treatment allows us to increase the rate of liver resection for those who previously may not be able to do so. One adjuvant treatment is to change the size of the tumor by chemoembolization, or chemotherapy in liver metastases, to decrease the size of the mass. For the patient with large liver tumor, it is difficult and not safe to do a resection. But by applying the adjuvant treatment mentioned above, the tumor size may reduce and a surgery becomes possible. We have now achieved to help 1/3 of the patients changing their tumor size by applying chemoembolization or chemotherapy. The number of patients for liver surgery has thus been increased. The second adjuvant treatment is to change the liver parenchyma. It is chosen when the patient could not survive after the operation when the remnant liver is too small to support the recovery. For example, if we remove 80% of the liver with tumor, the remnant liver is not enough for the patient to survive. This adjuvant treatment is to increase the remaining part of the liver by blocking blood flows to the disease part of the liver before surgery, at the same time the parenchyma increases. After that, a surgery may become possible in some of the cases. That means the adjuvant treatments provide different ways to help to increase the surgical resection rate either by decrease the tumor size or to increase the parenchyma.

Other new technique developed in the last decade is the interventional therapy for liver tumor, among which the radio frequency abolition has to be specially mentioned. Radio frequency abolition is basically to burn the tumor when the patients are not suitable for a major surgery because of various conditions. This is what I have to point out that to treat the liver cancer is not only something to do with the surgical skills, but also all other combined treatments, including radiology, endoscopes, and so on. As surgeons, we should adopt all these.

HBSN: What would you comment on the current statues and development in liver transplantation? What do you view the shortage of the organ donor, and how it be solved in France?

Prof. Bismuth: The transplantation has always been big matter and with big problems. For the patients with liver tumor and at the mean time with chronic liver disease such as cirrhosis, transplantation of the liver would be the ultimate treatment. In China, there are many patients with hepatitis B infection or being HBV carrier, which may finally develop into cirrhosis. The latter is a lethal chronic disease, with which many people dying of. The only treatment that may cure such patient is liver transplantation, to change the liver which is no longer working with a new liver. Then the problem becomes how to obtain a new liver, a graft. This is a problem. We have two ways to get the graft: from deceased donor or living donor. To obtain the grafts from deceased donor is difficult to organize. You may collect the organ donor from the traffic accidents, from brain death, and so on. This needs a very heavy organization with a strong networking.

For living donor liver transplantation, the problem is ethical matter. So in one end you have problem of heavy organization, and other is ethics. Then who will be the donor? We are very careful in our country upon this issue. We cannot use the living donor directly; we need the vote from an ethical committee, and then a judge will meet the donor alone. The judge will ask every question including the motivation from the donor. In addition, the donor and the recipient must be strictly in the very same family. In France, the relevant laws and regulations are very strict. It only allows the father, the mother, the children being donor for the transplantation; even the uncle is not permitted, nor is the cousin. If the liver is from the brother to the sister, he must have been seen by the judge and by the committee separately, and have a conversation together with the donor, to know what the motivation is, whether the brother is forced to give the live to his sister by his family. We must be sure about the will of the donor. If the donor is not the member of the family, we cannot be sure the reason of the donation. It is then not permitted. So in France, we only accept the family donor. In America, it is a bit different. Normally they accepted sentimental donor. For example, someone who is a friend of a family may say I love this child, I have known him for many years, and would like to donate part of my liver to the child. This is called good sentimental donor. But in France, as in some European countries, it is not accepted. We are always afraid that there might be financial issues behind this donation.

As the effort is to decrease the traffic accidents, which is a good way to be forward to, that will at the mean time decrease the number of brain death donor. Then we have to improve the way of using the graft. Sometimes we are going

to take the "bad" liver such as fatty liver, which previously would be discarded. That is what we call the discarded donor or diseased donor with bad condition. We then have to improve the graft in order to use in the transplantation, which I think is not good. Also today we use the cardiac death donor, and may try to increase the donor from this way. In those with cardiac death, the organ has to be obtained more efficiently with more organized work, which is more difficult than that from brain death donor.

HBSN: What do you view the importance of hepatobiliary surgery today? And what do you see the future development in this professional field?

Prof. Bismuth: The importance of hepatobiliary surgery today? I will give you an example. In Annals of Surgery, a most famous, highest impact factor surgical journal, according to an analysis of paper published last year, the main topic of the articles was hepatobiliary surgery, including liver transplantation. If 20% of the papers published last year in this journal are about liver surgery and liver transplantation, what does it mean? It means that there are prominent changes, revolutions, and progresses being made in this field. It is one of the most important surgical fields.

I suppose in the next decade, the development in hepatobiliary surgery would be the diverse innovative approaches of liver and biliary diseases, which means the patients will not be confirmed to one specialist. The patients would be scheduled to see a group of specialists, including hepatologists, surgeons, oncologists, endoscopy experts and so on, working all together as a team. The patients should be referred to and discussed among a group of specialists in order to achieve an overall strategy for the treatment. The decision is no longer a specific treatment for a disease, such as for liver tumor, but is a strategy of the treatment in association with all perspectives, managing and cooperating together or in a sequence, including chemotherapy, embolization, and surgery, and so on. Then the surgeons will have the patients with liver cancer at the best state, timing, liver function, nutritional condition, and overall situation for a surgery. This is, I may say, the present decade we enter. My hepatobiliary center in Paris is a model of this. I achieved to put all these together. It is no more the department of the surgery, but the department of liver diseases where all specialists work together.

In the future, we will have to train more qualified liver surgeons, especially in some underdeveloped countries, where there are still patients dying of simple liver diseases, small tumors, for nobody knows how to do liver surgery. We have organized a "Master's Program" in my institute. We receive young surgeons who are working in general surgical area across the world for one year to train them how to do hepatobiliary surgery. There are about 35 such centers in the world, mainly located in America and Europe. It is very important to improve the coverage and intense of the liver surgery worldwide.

Thank you so much, it really helps!

Cite this article as: He VJ. Professor Henri Bismuth: the past, present and future of hepatobiliary surgery. Hepatobiliary Surg Nutr 2013;2(4):236-238. doi: 10.3978/j.issn.2304-3881.2013.07.01

Acknowledgements

Disclosure: The author declares no conflict of interest.

(Vicky J. He, Science Editor of HBSN, editor@thehbsn.org)

