

Professor William Jarnagin: biliary malignancy



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Professor William R. Jarnagin (Figure 1) served as the Hepatobiliary Fellow at Memorial Sloan-Kettering Cancer Center (MSKCC) from 1996-97. Since 1997, he has been an attending surgeon at Memorial Sloan-Kettering Cancer Center, where he has served as Chief of the Hepatopancreatobiliary Service since 2008 and was a Vice-Chairman of the Department of Surgery from 2006-2010. He holds the Enid A. Haupt Chair in surgery at MSKCC and is Professor of Surgery at Weill Medical College of Cornell University.

His research has focused on genomics, novel therapies and biomarkers of treatment response in patients with biliary cancer, intraoperative navigation during hepatic resection and intraoperative blood conservation strategies during liver and pancreas resection.

HBSN: *Could you please give us a brief introduction of treatment for hilar cholangiocarcinoma?*

Prof. Jarnagin: The main point is, surgery for hilar cholangiocarcinoma is the most effective treatment, but it's associated with high rates of complications and mortality, and the long-term results are still not as good as they should be. We need to increasingly look at ways to improve the results of surgery, to make it safer for patients, and also try to improve the long-term control of the cancer. We have several techniques emerging to help us improve the safety and preoperative prevalent embolization and drainage procedures. And those, I think, are increasingly being used and are helpful. In the long run, we need better drugs and better chemotherapy to help treat the cancer.

HBSN: *You mentioned several techniques just now, what are they?*

Prof. Jarnagin: Portal vein embolization is a technique that blocks the flow of blood to the part of the liver that will be removed, so the other remaining side will get larger. Preoperative biliary drainage is to decompress the liver, particularly the part of the liver that will remain behind and improve the function.



Figure 1 Professor William Jarnagin.

HBSN: *Could you please talk about the key factors for the improvement of morbidity and mortality?*

Prof. Jarnagin: So, improving the morbidity, making the operation safer, involves using the technique of preoperative biliary drainage to decompress the liver that will remain behind after the surgery. That is something that will increasingly be used. Also in some patients, we'll have a very small portion of the liver that'll remain. We use the preoperative portal vein embolization to increase the size. There is also a technique that is emerging called ALPPS, which is a two-stage operation to try to increase the remnant volume of the liver. That's a new technique still not quite ready to be adopted, but it is being investigated.

HBSN: *Have you ever tried to do so?*

Prof. Jarnagin: No, I have not, but others have. I'm concerned about the procedure. I think right now the mortality rate associated with this operation is very high, so right now I'm not sure it's the right thing to do. It may overtime become more appropriate, but right now it's a bit risky.

HBSN: *Are there any other aspects expected to be improved in the future?*

Prof. Jarnagin: I think overtime we will hopefully see better chemotherapy drugs, better understanding of the molecular biology that drives these cancers, so that we can maybe design drugs, targeted treatments to interrupt these abnormal pathways and obtain better response to chemotherapy. That will help more patients than any improvement in surgical technique.

HBSN: *Could you please give a brief introduction about biliary malignancy in terms of earlier diagnosis?*

Prof. Jarnagin: Well, in most part of the world, biliary cancer is very uncommon, except in certain small areas of the world. So in most places, detecting this tumor early is difficult. We have to screen thousands and thousands and thousands of people to find cancers in maybe just one or two. So for most countries in most parts of the world, it's not practical to do screening to try an early detection of tumors. In some places like in Thailand, there's a high risk of cholangiocarcinoma, and in Japan and India, and Chile, where they have high incidences of gallbladder cancer, those strategies may be more useful, but for most places it's difficult to do that.

HBSN: *What about different treatments and prognoses for biliary malignancy?*

Prof. Jarnagin: Well, the prognosis really depends on the stage of the disease and what treatments can be done, if you can do surgery to remove it. That's obviously the best treatment. And patients do much better. Of course, if you can resect it, it implies that they have early stage of cancers. So for patients with very advanced cancer, chemotherapy is not very effective, and the prognosis for those patients is poor.

HBSN: *What do you think is the cutting-edge frontier in biliary malignancy?*

Prof. Jarnagin: I think the cutting edge is really a better understanding of molecular biology, the changes that take place and that start these cancers and allow them to progress. So that's really where we will make the most progress in the next ten years.

HBSN: *From where you're standing, what can be expected in the future development of biliary malignancy?*

Prof. Jarnagin: I think we can see continuing improvements and results of surgery. I think, that will continue to get better. So I think that will continue to get better, and we'll also find more drugs that will be more effective. I think that will mean that the large majority of patients with advanced cancers will have treatment options that will help extend their lives and improve their lives.

HBSN: *I notice that you have many articles about biliary malignancy, could you give a brief introduction about the management of biliary malignancy?*

Prof. Jarnagin: Biliary malignancy is a broad topic. There are many different types of biliary cancers, intrahepatic, cholangiocarcinoma, extrahepatic, and gallbladder cancer. These are really different diseases, and it's hard to summarize the management of each and every one in one or two lines. But for the most part, these are diseases that are best treated with surgery, if they can be. Now non-surgical treatments are not very effective.

HBSN: *How would you describe the biliary malignancy from perspective of clinical research and basic research?*

Prof. Jarnagin: As for basic research, I think again, the greatest contributions are going to come in understanding molecular biology, the genetic mutations that lead to these cancers and allow them to progress. By understanding those, we'll have a greater ability to design drugs and targeted therapies to help improve response to the chemotherapy. And also in clinical research, looking at these different drugs, not only the newer drugs, but combination of older drugs to help improve the results.

HBSN: *Thank you very much!*

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