Advanced Liver and Bile Duct Surgery

Together We Heal

Mount Sinai Recanati/Miller Transplantation Institute
Message from the RMTI Directors

Located in New York City, The Mount Sinai Medical Center is the oldest not-for-profit hospital in the United States and provides world-class leadership in patient care, research, and education. The Recanati/Miller Transplantation Institute (RMTI) was inaugurated in 1998 with an endowment from a former transplant recipient. Under the structure of an institute, we are able to provide resources that are essential to creating an environment that fosters innovation and excellence in patient care.

In keeping with the RMTI mission to continuously enhance services and emphasize patient-centric care, we are thrilled that Dr. Myron Schwartz has joined us as Director of Liver and Bile Duct Surgery. Dr. Schwartz runs one of the largest, most respected hepatobiliary surgery and liver cancer management programs in the United States today. The merging of his services under the RMTI umbrella will ensure that all patients with liver and bile duct cancer, many of whom also have end-stage liver disease, get the full spectrum of care in a seamless, cohesive manner. There is no doubt that this pairing in leadership sets Mount Sinai as the premier choice for the treatment of liver cancer in the world.

Sincerely,

Sander S. Florman, MD
Leona Kim-Schluger, MD

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Leona Kim-Schluger, MD
Liver Surgery at Mount Sinai was born when Dr Charles Miller and I established our Liver Transplant Program in September, 1988, and liver cancer has been my passion from the outset: the second patient we transplanted (we are now well past 3000) had liver cancer. We have pioneered surgical techniques, treatment protocols, and novel approaches to this deadly disease over the past 25 years that have put Mount Sinai at the forefront worldwide, and with over 400 new liver cancer patients seen each year ours is now the largest center in the United States. The techniques that we have developed, many of which are drawn from liver transplantation, have enabled us to extend surgical treatment to a wide array of benign and malignant diseases of the liver and bile ducts.

Liver cancer happens to people with chronic liver disease, usually viral hepatitis. We have established screening and surveillance programs for these patients in the community, and as a result we are able to offer potentially curative surgery to more than half of the liver cancer patients we see. This contrasts sharply with the picture around the nation, where only 20% of patients are diagnosed when there is a chance for cure.

We have performed nearly 3000 liver resections and 800 liver transplants for people with liver tumors. Our colleagues in Interventional Radiology perform around 1500 nonsurgical liver cancer treatments a year including radiofrequency and microwave ablation, and chemo- and radioembolization. We at Mount Sinai led the development of sorafenib (Nexavar), the first and only drug that has been shown to help people with advanced liver cancer live longer.
Providing excellent care has always been and will always be the cornerstone of our Program, but our aim is beyond those individuals we physically touch. I was fortunate enough to receive a multi-year grant from the NIH, a K24 mid-career clinical investigator award entitled “Systematic integration of patient-oriented research into the clinical pathway for hepatocellular carcinoma”. This award, together with our large experience, helped attract Josep Llovet MD, one of the world’s foremost experts in liver cancer research, to come from Barcelona to Mount Sinai to develop a translational research program that now leads the field in defining the molecular basis of liver cancer and identifying new targets for tumor treatment. Discoveries made in our laboratory are already leading to trials of new drugs that promise to help people with liver cancer around the world.

Liver cancer is a complicated disease, and consistently achieving the best results requires a team of specialists working smoothly together. Our entire team—our surgeons, hepatologists, radiologists, oncologists, pathologists, and all those who support our efforts—is here for you.

Sincerely,

Myron Schwartz, MD
## Our Team

### Surgeons

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### Physician Extenders

- Dorothy Robinson, NP
- Kathy Wu, PA

### Medical Assistants:

- Naysa Gonzalez
- Vivian Ramirez

### Administrative Assistant:

- Carolina Gutierrez

### Physician and Patient Liaison Services

- Sharyn Kreitzer, MSW
“Only with an interdisciplinary team made up of transplant and cancer surgeons, hepatologists, radiologists, and oncologists working together can the best decisions be made and treatments carried out.”
What We Treat

We treat a wide array of benign and malignant conditions that affect the liver and bile ducts, including:

**Primary liver cancer (hepatocellular carcinoma)**

Hepatocellular carcinoma (HCC) is the second-leading cause of death from cancer worldwide, and is one of the few types of cancer whose incidence is rising in the United States. Nearly all cases of HCC develop after many years of inflammation of the liver—most commonly due to infection with the hepatitis B or hepatitis C virus—has resulted in the build-up of scar tissue (cirrhosis). Since we know who is predisposed, HCC is an ideal target for cancer screening: by performing scans every six months on people with cirrhosis, HCC can be detected at an early stage when there is a good chance for cure. Having two diseases—cirrhosis and cancer—makes treating HCC a balancing act—what is good to treat the cancer may be bad for the liver.

**Cholangiocarcinoma (Bile Duct Cancer) and Gallbladder Cancer**

The liver produces bile (a digestive juice) that is carried from the liver to the intestine by a system of passages called the bile ducts; the gallbladder is an out-pouching of the main bile duct where bile is stored between meals. Cancers can develop at any point along their path. When cholangiocarcinoma forms from ducts inside the liver it produces a mass that can grow to a large size; when it forms in the ducts outside the liver it usually blocks the flow of bile and causes jaundice before it gets very large. Like HCC, the incidence of cholangiocarcinoma is rising in the US. While having chronic liver disease raises the chance of getting cholangiocarcinoma, unlike HCC most people with cholangiocarcinoma don’t have another liver disease. This makes it easier to treat than HCC, but since we don’t know who is at risk to get cholangiocarcinoma we can’t do screening so most cases are found when they are quite large. Different from HCC, chemotherapy works here, and the best results come from combining surgery, chemotherapy, and radiation. For cholangiocarcinoma that arises near the branching point of the bile ducts, Mount Sinai is one of the few select centers in the U.S. with a UNOS-approved protocol to perform liver transplantation.
Colon cancer: Colon cancer is the second most-deadly type of cancer. The liver is like a filter for all the blood that drains from the colon, and in around 30% of people with colon cancer spread to the liver occurs. Even though spread to the liver in considered Stage 4, surgery to remove the liver tumors can result in long-term survival. We use a wide array of advanced surgical techniques, including many borrowed from liver transplantation, to remove liver tumors that in the past or at other centers are considered not removable, and in cases where at first removal of liver tumors is impossible we work with our oncologists to shrink or “down-stage” the cancer using chemotherapy to where surgery is possible.

Neuroendocrine tumors: These tumors produce protein hormones that can cause a wide variety of effects throughout the body. They can arise in many places; in the lung and intestine they often produce substances that can cause episodes of flushing called carcinoid syndrome, and in the pancreas they can produce a variety of hormones including insulin that causes low blood sugar, gastrin that causes ulcers, and chromogranin, a protein that doesn’t cause symptoms but which is useful.

“HCC can be detected at an early stage when there is a good chance for cure.”

Q was 38 when she was diagnosed with HCC. She was seen by Dr. Schwartz and the Mount Sinai team quickly. Within a month of her diagnosis she was home recuperating after liver resection surgery.

She is now cancer free.

“I knew that Mount Sinai was the best place for my condition...Dr. Schwartz was so kind, clear and capable...I was in the best hands possible”.

- Q, liver resection patient
  September, 2012
as a tumor marker. Neuroendocrine tumors are usually slow-growing, and the liver is the most common site of spread. This is one cancer where “debulking” - removing most of the cancer - makes people live longer. Debulking is particularly useful when tumors in the liver are producing a lot of hormones that cause flushing or other symptoms. Mount Sinai is an internationally-recognized Neuroendocrine Center; we have extensive experience performing aggressive surgery as well as a large program of radioembolization for unremovable liver metastases and an array of clinical trials employing new drugs and other innovative strategies. This is one of the types of metastatic cancer for which liver transplant has a role; we have transplanted 16 patients at Mount Sinai for whom all other options have been exhausted, with excellent results.

“Mount Sinai has pioneered surgical techniques, treatment protocols, and novel approaches to liver and bile duct cancer that have put us at the forefront of liver surgery worldwide.”
Despite all the many years of research, so far there is only one medicine, sorafenib, that can make people with HCC live longer. Sorafenib works not by killing cancer but rather by stopping its growth for a while; in the study that led to approval of sorafenib by the FDA, the 300 people with advanced HCC who received sorafenib lived an average of 10.7 months compared to 7.9 months for the 300 people who received a placebo. Hope for cure of HCC depends on removing or in some other way destroying the tumor before it spreads. The fact that most people with HCC have cirrhosis greatly complicates matters; what is good from the standpoint of treating the cancer may be bad from the standpoint of the liver. Only with an interdisciplinary team made up of transplant and cancer surgeons, hepatologists (medical liver specialists), radiologists, and oncologists working together can the best decisions be made and treatments carried out; Dr Schwartz and the Liver Surgery team lead this effort and provide continuity of care throughout the course of treatment.

Liver resection

Liver resection means removing the part of the liver that contains the tumor. Removing the segment of the liver where the tumor has developed, including a rim of normal liver tissue around the tumor, is the best way to assure complete removal of an HCC short of removing the whole liver (which, of course, requires a liver transplant). A normal liver has an amazing ability to regenerate, to grow back- within a month after surgery to remove part of the liver, the remaining liver will grow until it is the same size as the liver originally was (minus the tumor, of course). For those few people with HCC who don’t have cirrhosis, resection is clearly the treatment of choice. The majority of people with HCC have cirrhosis, though, and a cirrhotic liver doesn’t regenerate as quickly or as completely as a normal one. Still, as long as the liver is functioning normally, resection can be safely performed in people with cirrhosis, as well. We especially favor resection when there is just a single nodule of HCC. The size of the HCC doesn’t matter; even very large tumors can often be resected with good results.

For patients with early-stage HCC resected at Mount Sinai the chances of still being alive
5 years after surgery are 74%. In more than half of our patients who have resection HCC comes back at some point, but with close follow-up we usually find recurrent HCC at an early stage when it can still be successfully treated, often without surgery.

**Liver transplantation**

People with early HCC (either one tumor with a diameter ≤5 cm, or 2–3 tumors all ≤3 cm) who because of poor liver function cannot have resection qualify for priority for a liver transplant. Transplant is an appealing idea since it removes both the tumor and the cirrhosis. Indeed, the likelihood of cancer returning is only around 10% after a transplant compared to over 50% for resection. Transplant is complicated though; the likelihood of being alive 5 years after a transplant for HCC is almost exactly the same as for resection, around 75%. The other difficulty with transplant is that there aren’t enough donor livers so people have to wait, often a year or more. Even though we use nonsurgical treatments to keep the HCC from growing, about 20% of people who go on the waiting list with HCC never make it to get a liver. That why people with HCC and their families often consider the option of living donor
transplantation (we have the largest experience with living donor transplants for HCC in the US). For people with HCC that is too advanced to qualify for priority, transplant is still a possibility; we aggressively treat the tumors to reduce their size and number to within the acceptable limits.

**Nonsurgical locoregional therapy**

Most people with HCC, either because of the size, number, and location of the tumors or because of poor liver function, cannot have a resection. We have a number of ways that we can treat HCC in the liver without surgery. These treatments fall into two main categories: direct destruction (ablation) either by injection of chemicals or by placing a device into the tumor to heat or freeze it (thermal ablation), or by way of the blood supply (transarterial treatment), injecting particles that contain anticancer drugs or radiation into the blood vessel feeding the tumor to destroy it from within. Locoregional therapy may be the primary treatment for people with early stage HCC who are for some reason not able to have resection or a liver transplant, as well as for people with intermediate stage HCC. We at Mount Sinai are now studying whether locoregional treatment can help people with more advanced HCC, as well. One of the main uses of locoregional treatment is in people who are waiting for a liver transplant to keep their HCC from growing during the time it takes to get a liver.

**Systemic (medical) treatment**

Despite many years of research, so far there is only one medicine, sorafenib, that can make people with HCC live longer. Sorafenib works not by killing cancer but rather by stopping its growth for a while. In the study that led to the approval of sorafenib by the FDA (which was led by Mount Sinai), the 300 people with advanced HCC who received sorafenib lived an average of 7.9 months compared to 10.7 months for the 300 people who received a placebo. While an important breakthrough, sorafenib is only a beginning; at Mount Sinai we continue to lead clinical trials looking for new drugs to improve results in combination with or instead of sorafenib as well as after sorafenib stops working.
To make an appointment:

Call our main phone: 212-659-8084 or Email: RMTILiverCancer@mountsinai.org

We are committed to expediting appointments for all new patients and will try our best to ensure an appointment within a week of a phone call. It is preferable to receive and review relevant records and imaging studies prior to this appointment.

Our referral team will request the following:
- Consult/progress notes
- Pathology reports
- Operative and discharge notes
- Reports of recent blood tests
- Written reports of X-rays, scans and ultrasounds

It is essential that we review the actual images of key CT/MRI imaging studies, CD’s of CT/MRI imaging, along with pathology slides when available.

We have a dedicated physician and patient outreach liaison who is available to assist with access to our program(s), visitor information, educational and supportive resources:

Sharyn Kreitzer, MSW
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