Liver & Bile Duct Surgery

Patients who need surgery for tumors, cysts, or cancer of the liver or bile ducts have special needs:

- The best, state-of-the-art surgical care
- The most up-to-date therapies and techniques
- Special attention to medical health concerns before and after surgery
- Attention to psychosocial concerns, nutritional evaluation, physical therapy, and rehabilitation
- Communication with family members and referring physicians
- Ability to provide comprehensive post-surgery follow-up care

At Tulane Abdominal Transplant Institute, we recognize these needs and have developed comprehensive care for the liver & bile duct surgery patient. The team approach to patient care means we focus on each individual patient’s needs and situation. We discuss all treatment options with each patient and family. We are NOT simply a surgery center; we are a Liver Disease Management Center, committed to providing the patients and physicians we serve with the most advanced technologies and treatment options available.

Our team includes:

**Surgeons**
- Specializing in liver, bile duct, and pancreatic surgery
- Advanced minimally invasive procedures

**Hepatologists/Gastroenterologists**
- Medical specialists devoted to complete assessment of patients' medical condition and treatment options

**Endoscopic ultrasound**
- Allows for advanced diagnostic testing as an outpatient

**Radiology**
- Advanced imaging: 3-D CAT scans, MRI, PET scans
- Interventional radiologists perform various types of biopsies and treatments (ablation/embolization) of tumors, all directed by the management team

**Oncology**
- As part of the team, the Tulane Cancer Center staff provides cutting-edge treatments and coordinates clinical trials. Oncologists specializing in the liver and pancreas provide up-to-date treatments and participate in national trials of new therapies.

Specialized nurses, social workers, dietitians, and physical therapists ensure a holistic approach to care for each patient, guided by a team specializing in all aspects of patient care. The team meets regularly at our Multidisciplinary Hepatobiliary Tumor Board to discuss new cases and progress of patients undergoing treatment. This ensures that no detail is left untreated.
During your first appointment, we will review all your medical history, any information from your doctor, and your x-rays. It would be very helpful if you can bring any medical records you have, a list of your medications, and your recent x-rays. If you have any questions about your appointment, please call us!

**Diagnosis**

Making the diagnosis is the first step when coming for an evaluation. Imaging techniques as well as biopsies and blood tests can lead to a diagnosis. If biopsy is indicated, we can proceed with minimally invasive techniques. If amenable, radiologists can perform biopsies with the aid of ultrasound or CAT scan. However, many of our patients have underlying liver disease and may need multiple biopsies. If this is the case, patients are scheduled for laparoscopic biopsies in the operating room.

Masses or diseases found in the liver are generally categorized as benign (not cancer) or malignant (cancer). The masses may have started in the liver or spread from someplace else. Examples of such include:

**Liver Lesions**

**Benign**
- Abscess (bacterial, echinococcal, amebic)
- Cysts (simple or multiple)
- Cystadenomas
- Hemangiomas
- FNH (Focal Nodular Hyperplasia)
- Adenoma

**Malignant**
- Metastatic from another place (ie. Colon)
- HCC (hepatocellular carcinoma or ‘liver’ cancer)
- Cystadenocarcinoma
- Sarcoma

**Biliary Diseases**

**Benign**
- Gallbladder disease (stones, sludge)
- Bile duct cysts (choledochocele, etc.)
- Benign bile duct strictures
- Bile duct injuries

**Malignant**
- Bile duct cancer
- Gallbladder cancer
- Cholangiocarcinoma
Treatment
Surgery for the liver and pancreas is highly specialized. We have specially trained liver surgery and transplant anesthesiologists and operating room nurses as part of the team. Careful planning and an understanding of the surgery indications and risks are important. Using modern surgical techniques, liver and pancreas surgery has become safer with improved results and faster patient recovery.

Depending on the diagnosis and the extent of disease, we have many options. If the lesion is benign, then often no further intervention is needed. However, certain lesions such as an adenoma, have the potential for bleeding and changing to cancer, therefore removal is recommended.

If the lesion is malignant, then we must then evaluate if it can be removed and whether the patient is healthy enough to tolerate the surgery.

If patients are determined to have a resectable lesion, then depending on the location we can either do the removal laparoscopically (through small incisions and a camera) or the standard way through an incision in the abdomen.

The recovery of these two types of surgery is very different because of the extent of the incision. However, the decision on which way to proceed is determined on the safest way for the patient to obtain the best result. The normal liver is able to re-grow quite rapidly. In fact, up to $\frac{2}{3}$ of a normal liver may be removed and will re-grow within 6 to 8 weeks.

If the lesion is not able to be resected (removed completely)-then we have a variety of treatment options. Generally, these therapies are aimed at melting or killing the tumor itself. These methods include:

Transarterial Chemoembolization (TACE)
Transarterial chemoembolization (TACE) is a method of treating cancer in the liver that is not respectable. Resection is not possible for patients with very large tumors or multiple lesions. More important, the patient must have good liver function so that the remaining portion can compensate for the portion of the liver that is removed. Unfortunately, many primary liver cancers (HCC) form in patients with cirrhosis and are therefore not respectable. One option for patients in this situation is TACE. In this procedure, radiology specialists place chemotherapy agents directly into the blood vessels that feed the liver tumor. After that, they place coils within the small artery to cut off the blood supply to the tumor. The procedure is performed through a needle placed into an artery, usually in the groin. Patients stay in the hospital overnight after this procedure and may experience some mild discomfort. Often as the tumor cells die, the patients will have a fever.
Radiofrequency Ablation (RFA)
Radiofrequency ablation (RFA) is a method of treating cancer in the liver that is not resectable. Resection is not possible for patients with very large tumors or multiple lesions. More important, the patient must have good liver function so that the remaining portion can compensate for the portion of the liver that is removed. Unfortunately, many primary liver cancers (HCC) form in patients with cirrhosis and are therefore not resectable. One option for patients in this situation is RFA. This procedure is performed either in the operating room with laparoscopic technique or in the radiology suite. RFA uses small probes which are placed directly into the tumor. Electric current is then passed through the probe to melt the tumor cells. Patients usually stay overnight following the procedure and may experience some discomfort on the right side of the abdomen.

Alcohol Injection
Using a needle, alcohol can be injected into the tumor using the guidance of ultrasound or CT. The alcohol works to kill the cells in the tumor. This technique is often used in patients who cannot tolerate RFA or TACE, tumors that are large or as additional therapy to another primary method.

In some patients the entire tumor may be eliminated, but none of these techniques can be guaranteed to be 100% effective. However, most patients have excellent results, with the majority of the tumor being destroyed. Sometimes we use a combination of techniques to destroy the tumor more effectively. Afterward, patients may need additional chemo- and/or radiation therapy.