**Introduction**

Many recent advances in medicine and surgery have made it possible to successfully treat, and sometimes cure, cancers that were previously considered incurable. At California Pacific Medical Center, these advances have been incorporated into a multidisciplinary approach that can offer treatment for most patients who have developed metastatic liver lesions from malignant tumors such as colon cancer or breast cancer. Our team of specialists will work with you to provide a comprehensive treatment plan that includes the latest technology in diagnosis and treatment.

**What are Metastatic Liver Lesions?**

Cancer can develop in any organ and each cancer acts differently in its tendency to spread to other organs. When a cancer has spread to the liver, it is referred to as a metastatic liver lesion. Sometimes the metastatic lesion is identified at the same time as the original cancer (synchronous) and sometimes the metastatic lesion is discovered later, after the original cancer has been treated or surgically removed (metachronous).
The liver has two separate sources of blood supply: the hepatic artery (provides oxygenated blood) and the portal vein (carries blood from the intestines back to the liver for extraction of nutrients). For this reason, the liver is the most common site for metastasis from gastrointestinal cancers, such as colon cancer or pancreatic cancer.

**Detecting and Staging Metastases**

When cancer has spread to the liver, it typically does not cause any symptoms. As a result, most patients do not notice any change in their health. Blood tests and imaging, such as CT scan or ultrasound, are important tools to detect metastatic liver lesions at an early stage, when they are most effectively treated. These tests can also be helpful in determining if the cancer has spread to areas in addition to the liver. In some patients additional testing, such as a positron emission tomography (PET) and MRI scan may be required to determine the extent of the liver metastases.

**Treatment Options for Metastatic Liver Lesions**

Once a metastatic liver lesion is detected, patients should undergo a rapid medical, oncologic and surgical evaluation to determine the most appropriate treatment. The treatment may vary between patients, and will be tailored to best fit each individual’s specific needs. Frequently, combinations of treatments, rather than a single type of treatment will be required, and you will meet with a team of specialists to discuss these different options during your evaluation.
Chemotherapy

Systemic Chemotherapy
The most common treatment used for metastatic liver lesions is systemic chemotherapy. In this treatment, anti-cancer medications may be delivered intravenously, or by ingestion of an oral preparation containing the anti-cancer drug.

Cancer cells vary widely in their response to systemic chemotherapy, and some cancers respond well to chemotherapy, while others may be unaffected. This type of treatment is commonly offered for patients who have large malignant tumors that cannot be removed surgically, or patients who have cancer spread to other organs in addition to the liver.

Transarterial Chemoembolization (TACE)
Some patients may be more appropriate for a specialized form of chemotherapy, TACE, which uses special catheters to deliver chemotherapeutic drugs directly into the artery supplying the liver. This procedure focuses the anti-cancer effect on the metastatic lesions in the liver, and tends to have fewer side effects commonly seen with systemic chemotherapy. TACE has the added advantage of being able to partially block the blood supply to the area of the cancer, depriving the blood supply needed by the cancer cells for nutrients and oxygen. For most individuals TACE is well-tolerated, with few side-effects, and can frequently be performed as an outpatient procedure.

Radiofrequency Ablation
Patients with small metastatic tumors may be best treated with radiofrequency ablation (RFA). With this procedure, a specially designed probe is radiographically guided into the liver tumor, and radiofrequency energy is used to destroy tumor cells. During the procedure, tumor cells are heated to more than 50°C.

Most commonly, this procedure is done using laparoscopic surgery (small incisions on the abdomen), or performed in the radiology suite, using CT guidance. In some instances, open surgery may be required to perform this procedure.

RFA may be used for patients who have unresectable metastatic liver lesions, or are too ill to undergo surgical resection, and may be used in combination with other forms of treatment.

Surgery
Surgical resection involves removing a portion of the liver that contains the metastatic lesion. This treatment is reserved for patients with no underlying liver disease (such as cirrhosis), and who are otherwise healthy enough to withstand a major operation.

Surgeons can remove as much as 70 percent of the liver in attempting to remove cancerous lesions, since the liver possesses the ability to regenerate after surgical resection. The liver will typically replace the removed liver volume within several weeks after surgical resection.

In patients with metastatic liver lesions localized to one anatomic region of the liver, surgical resection offers the best chance for cure. Only a physician or surgeon experienced with the treatment of metastatic liver lesions can determine if surgical resection is right for you.
**Why Choose Us**

Hepatobiliary and pancreas diseases—disorders of the liver, bile ducts, gallbladder and pancreas—form a complex set of medical problems whose treatment often requires equally challenging minimally invasive or surgical procedures.

At California Pacific Medical Center, we have been leaders in hepatobiliary and pancreas disorders since the founding of our Liver Disease and Transplant Program in 1988. Our doctors are closely involved in clinical research and surgical innovation. Annually, our physicians provide care to some 4,000 hepatobiliary and pancreas patients, both in San Francisco and at our network of outreach sites in California and Nevada.

For patients requiring hospitalization, we have a dedicated critical care liver unit, hospitalists who specialize hepatobiliary and pancreatic disease, physician assistants, on-call anesthesia staff and a specialized O.R. nursing team. At California Pacific, our focus is on providing experienced, personalized care for all patients.

**Sutter Pacific Medical Foundation**

Our hepatologists and hepatobiliary surgeons are members of Sutter Pacific Medical Foundation, a nonprofit organization that provides patient care through its affiliation with three medical groups. Sutter Pacific’s 230+ doctors deliver health care services in San Francisco, Marin, Sonoma and Lake Counties, with additional outreach locations throughout Northern California. The relationship between Sutter Pacific physicians and local Sutter Health facilities helps link both doctors and patients with hospital services, enabling the highest quality care delivery. For more information visit sutterpacific.org.

**Cancer Navigation Service**

Our Cancer Care Navigation Service provides individuals and families assistance with appointment scheduling, patient education and support service referral. Call 1-866-975-COPE (2673) or email patientnavigation@sutterhealth.org

**Genetic Risk Assessment**

The Cancer Genetic Risk Assessment Program at California Pacific offers individuals with a personal or family history of cancer the opportunity to learn more about the genetic nature of their disease and whether they may be predisposed to other cancers which they could monitor. Individuals meet with our genetic counselor during which an evaluation of one’s medical and family history is performed, as well as a detailed risk assessment and genetic education. If appropriate, genetic testing may be offered and facilitated by the genetic counselor. A genetic risk assessment may assist in medical management decisions such as aggressive cancer screening and preventive measures. For more information, call the Cancer Genetic Risk Assessment Program at 415-600-5961 or visit www.cpmc.org/services/cancer-genetesting/

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**For more information**

**Liver Disease Management & Transplant Program**
California Pacific Medical Center, Pacific Campus
2333 Buchanan Street
San Francisco, Calif. 94115
www.cpmc.org/liver

**Hepatologists**
Tel. 415-600–1000 (ask for on-call hepatologist)
Fax. 415-600–1020

**Hepatobiliary Surgeons**
Tel. 415-600–1010
Fax. 415-600–1012

**Oncologists**
Tel. 415-923-3012
Fax. 415-928-4840

**For referrals and patient transfer, contact California Pacific’s Specialty Referral Program**
1-888-637–2762 tel
1-415-600–2955 fax

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