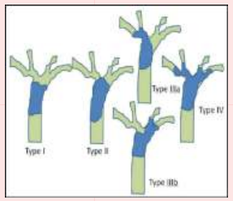
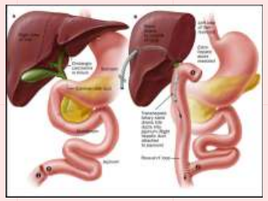
jaundice. Patients who will be candidate for surgical resection this will be done prior to surgery

Patients who are candidate for surgical resection will have a diagnostic laparoscopy done prior to surgery to assess the operability.

Treatment options for Hilar Cholangiocarcinoma:

A) Surgery: Major hepatectomy combined with extra hepatic bile duct resection has increased the long term survival and should be considered standard therapy. In general, Bismuth-Corlette type I radical bile duct excision with hepaticojejunostomy is done. In





type II & III lesions typically require an major liver resection with hepaticojejunostomy. If the portal vein is involved the portal vein reconstruction may be required. In a locally advanced hilar cholangiocarcinoma neoadjuvant brachytherapy/chemotherapy may be considered.

B) Chemotherapy and radiotherapy: chemotherapy and radiotherapy is considered for unresectable hilar cholangiocarcinoma

C) Palliative care: If the patient is having a unresectable hilar cholangiocarcinoma or if the patient is not a candidate for major surgical resection then palliative care in the form of ERCP or PTBD is done to relieve the patients of obstructive jaundice symptoms

FAQ'S:

1)Do gallstones cause gallbladder cancer?

Ans: Gallstones are one of the risk factor for gallbladder cancer. Quite few patients with gallbladder cancer have gallstones at the time of diagnosis. Stone size of more than 3cm increases the risk of gall bladder cancer.

2) what is do I expect after a surgery for gall bladder cancer?

Ans: Patients who undergo radical cholecystectomy with wedge resection of liver will have a hospital stay of 4-5 days after surgery. They will be started on orals feeds within 48 hrs. If the patient requires a more aggressive surgery in the form of major hepatectomy then the hospital stay could be extended by few days depending on the recovery

3) Will I require chemotherapy or radiotherapy after surgery?

Ans: Patients with advanced gall bladder cancer or hilar cholangiocarcinoma will require multi disciplinary treatment modalities. Depending upon your CT scan report your surgeon might advice you to go for chemotherapy prior to surgery. You response to chemotherapy will assessed and then decision regarding your surgery will be taken. If the surgeon thinks that your gall bladder cancer is resectable then he will go ahead with surgery and based on the histopathology report you may or may not require chemotherapy or radiotherapy

4) What are the side effects of of chemotherapy and radiotherapy?

Ans: Radiation therapy may cause patients to become very tired as treatment continues. In addition, when patients receive radiation therapy, the skin in the treated area may sometimes become red, dry, and tender. Radiation therapy to the abdomen may cause nausea, vomiting, diarrhea, or other problems with digestion. For most patients, the side effects of radiation therapy go away when treatment is over.

The side effects of chemotherapy depend on the drugs and the doses the patient receives as well as how the drugs are administered. As with other types of treatment, side effects vary from patient to patient.

Patients who undergo chemotherapy may also be more likely to get infections, bruise or bleed easily, and may have less energy. Other side effects such as poor appetite, nausea and vomiting, diarrhea, or mouth sores. Usually, these side effects go away gradually during the recovery periods between treatments or after treatment is over.

5) What is the survival rate in Hilar Cholangiocarcinoma?

Ans: Survival depends on the stage of the cancer at the time of diagnosis. Most of the patients get diagnosed in advanced stages.

5 year survival in node negative disease is about 60%. In node positive disease its 35% In inoperable cases prognosis is very poor with 5 year survival rate of less than 5%

6) What is ERCP and PTBD?

Ans: ERCP(Endoscopic retrograde cholangiopancreaticogram) is a procedure which helps the doctor will introduce endoscopic tube via oral cavity and visualise your bile duct. It aids the doctor in taking biopsy. If the patient is having jaundice it helps in relieving the bile duct obstruction and reducing the bilirubin levels prior to surgery.

In patient with advanced disease, unresectable tumour and obstructive jaundice ERCP is used as palliative procedure to relieve the symptoms of obstructive jaundice and improve the quality of life for patient

PTBD (Percutaneous transhepatic biliary drainage) is a therapeutic procedure which leads to drainage of the obstructed bile duct. PTBD is done under fluoroscopy and USG guidance. Bile drains through the stent into the small intestine or into a collection bag outside the body. This procedure may relieve jaundice before surgery. The drainage of the bile ducts is performed with a small plastic catheter. The catheter is placed internally across the narrowed ducts.

ERCP and PTBD are done in patients with symptoms of obstructive jaundice. This is done prior to surgery so that the bilirubin levels come down. Once the bilirubin level comes below 2mg/dl patient will be taken up for surgery.

7)) What are the complications of surgery for gall bladder and bile duct cancers?

Ans: Bile leak, abdominal collections, wound infection, pneumonia. All these complications are managed conservatively. Rare complications include intra abdominal haemorrhage which may require surgery.

8) What is the follow up period after surgery?

Ans: In the first year its every 3 months. After 1 year its every 6 months

9) What is the survival rate in gall bladder cancer?

Ans: 5 year survival rate for resectable node negative disease is around 40-50% and node positive disease is 25%. Inoperable cases have extremely poor prognosis.

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A Patient's Guide To GALL BLADDER & BILIARY DUCT CANCER

Malignant Biliary Disease:

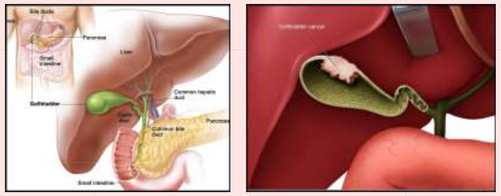
This includes gall bladder cancer and hilar cholangiocarcinoma.

Gall Bladder Cancer:

Gall bladder is a small pear shaped organ which is located beneath the liver on the right side of the abdomen. The gall bladder stores bile, a digestive fluid produced by your liver.

Gall bladder cancer is fairly common in India, especially in the Northern parts. When gall bladder cancer is discovered at its earliest stages, the chance for a cure is very good. Unfortunately, most gall bladder cancers are discovered at a late stage, when the prognosis is often very poor.

It usually presents in 6th or 7th decade of life and is 2-3 times more common in women.

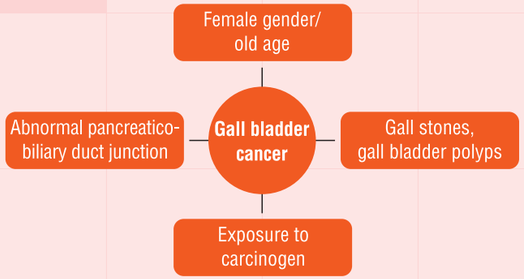


LOCATION OF GALL BLADDER

Signs and Symptoms:

- Abdominal pain, particularly in the upper right portion of the abdomen
- Abdominal bloating
- Fever
- Losing weight without trying
- Nausea
- Yellowing of the skin and whites of the eyes (jaundice)

Risk Factors for Gall Bladder Cancer:



Diagnosis of Gall Bladder Cancer:

Physical examination: Your doctor will examine your abdomen to look for any lump in the upper abdomen on the right side. Your eyes and skin will be examined to look for signs of jaundice

A) Blood investigations: Complete blood count, Liver function test, HIV, HBV and HCV testing, coagulation profile, CA19-9, CEA, Serum electrolytes, RFT

B) Radiological imaging: USG Abdomen, Triple phase CT scan of the abdomen, MRCP(if the tumour is invading the bile ducts), PET-CT scan

C) Biopsy: USG guided biopsy

If the patient presents with signs & symptoms of obstructive jaundice patient will be advised to get a ERCP or PTBD done to relieve the symptoms of obstructive jaundice. Patients who are candidate for surgical resection will have a diagnostic laparoscopy done prior to surgery to assess the operability.

Treatment options for Gall Bladder Cancer:

A) Surgery: Surgery for the gall bladder cancer depends on the stage of the cancer.

If the disease is confined to gall bladder then patient will require Radical cholecystectomy with wedge resection of the liver(4b/5 segments) with portal lymphadenectomy with or without bile duct resection

Some patients will get diagnosed of gall bladder cancer after undergoing laparoscopic cholecystectomy for the gall stones, this is defined as incidental gall bladder cancer. These patients will require a triple phase CT/ PET scan to look for residual disease. If Histopathology report after surgery is confirms gall bladder cancer then it should be followed up with revision radical cholecystectomy (wedge resection of the liver)with portal lymphadenectomy at the earliest for stages T2 and beyond. This patient may or may not require bile duct resection

In case the gall bladder cancer is invading the bile duct then these patients will require a radical bile duct excision along with radical cholecystectomy. If there is a major infiltration into the liver then the patient might require a major hepatectomy in the form of right hepatectomy or modified right extended hepatectomy along with radical cholecystectomy and portal lymphadenectomy. In these

patients future liver remnant(FLR) will assessed prior to surgery. If the patient will have adequate FLR after the major liver resection then he/she will be considered for surgery. Or else the patient will undergo Portal vein embolisation prior to surgery improve the FLR. In case of jaundice PTBD and stenting will be done on FLR side to reduce the bilirubin level and improving the FLR volume. Based on the extent of infiltration and bulk of the tumour patient may require chemotherapy prior to surgery

In some patients gall bladder cancer might infiltrate into adjacent structure like colon, duodenum or stomach. In these patients along with radical cholecystectomy involved organs may also be resected. In these patients if multi organ resection looks feasible and benificial then your surgeon might go ahead with surgery first may subject you to chemotherapy later, if not he might advise the patient to go for chemotherapy first and then assess the response to chemotherapy. If the response to chemotherapy is good then the patient might be considered for surgery.

We are one of the few centres in the country who offer major and aggressive surgical resections for gall bladder cancer with a good success rate

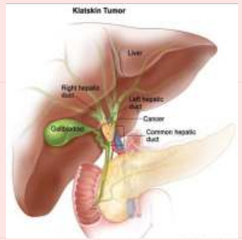
B) Chemotherapy and Radiotherapy: This is considered in patients with potentially unresectable gall bladder cancer or gall bladder cancer with widespread metastasis or technically resectable gall bladder cancer but patient is not a candidate for major surgical resection

C) Palliative care: Palliative care is given to patients who are not a candidate for surgical resection. Gall bladder cancer patients with obstructive jaundice will be advised to undergo ERCP or PTBD to relieve them of obstructive jaundice symptoms

Hilar Cholangiocarcinoma:

Hilar cholangiocarcinoma(Klatskin's tumour) is the cancer involving the confluence of right and left hepatic ducts.

The majority of patients are greater than 65 years of age, and the peak incidence occurs in the eighth decade of life. Cholangiocarcinoma may arise anywhere within the biliary tree but tumors involving the biliary confluence (hilar cholangiocarcinoma) are the most common. The majority of patients with unresectable bile duct cancer die within 12 months of diagnosis, often from hepatic failure or infectious complications secondary to biliary obstruction. The prognosis has been considered worse for lesions involving the biliary confluence compared with that for distal lesions.



Signs and Symptoms:

Jaundice (yellowish discolouration of eyes and skin)

Pain abdomen

Loss of weight and appetite

Fatigue

Fever with chills and rigor in case of cholangitis

Risk Factors for Hilar Cholangiocarcinoma:

- Primary sclerosing cholangitis
- Age more than 50 yrs
- Parasitic infection(clonorchis sinensis & opisthorchisviverreni)
- Chronic liver disease
- Smoking
- Choledochal cysts
- Congenital hepatic fibrosis
- Hepatitis B and Hepatitis C infection
- Obesity and diabetes
- Chemical compounds(dioxin, thorotrast)

Diagnosis of Hilar Cholangiocarcinoma:

A) Physical examination: Your doctor will examine your abdomen to look for any lump in the upper abdomen on the right side. Your eyes and skin will be examined to look for signs of jaundice

B) Blood investigations: Complete blood count, Liver function test, HIV, HBV and HCV testing, coagulation profile, CA19-9, CEA, Serum electrolytes, RFT

C) Radiological imaging: USG Abdomen, Triple phase CT scan of the abdomen, MRCP, PET-CT scan

D) Biopsy: EUS guided biopsy or brush cytology during ERCP

Often, a biopsy is not possible, or extremely difficult to obtain. Most often, the diagnosis of biliary cancer is based on radiology and bio-chemical markers. If the patient presents with signs & symptoms of obstructive jaundice patient will be advised to get a ERCP or PTBD done to relieve the symptoms of obstructive