



GHADIALI

General Surgery

P R E S E N T S

Dr. Mufa T. Ghadiali is skilled in all aspects of General Surgery.
His General Surgery Services include:

- General Surgery
- Advanced Laparoscopic Surgery
- Surgical Oncology
- Gastrointestinal Surgery
- Hernia Surgery
- Endoscopy

LIVER BIOSPSY

Multimedia Health Education

Disclaimer

This film is an educational resource only and should not be used to make a decision on **Liver Biopsy**. All such decisions must be made in consultation with a physician or licensed healthcare provider.

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GHADIALI

MULTIMEDIA HEALTH EDUCATION MANUAL

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What is a Liver Biopsy?

A liver biopsy is a procedure whereby small pieces of liver tissue are removed in order to be sent to a laboratory for examination.

It is very helpful in the diagnosis of diseases that affect the liver. The three main types of liver biopsy are percutaneous, transvenous, and laparoscopic.

Other techniques for obtaining liver biopsies are with fine needle aspiration as well as open surgery.

This learning module will concentrate on the percutaneous liver biopsy with a brief overview of the other types of liver biopsies.

(Refer fig. 1)

What is the Liver?

The liver is a vital organ with many important functions.

The liver functions to:

- Removes harmful chemicals from the blood
- Fights infection
- Helps digest food
- Stores nutrients and vitamins
- Stores energy

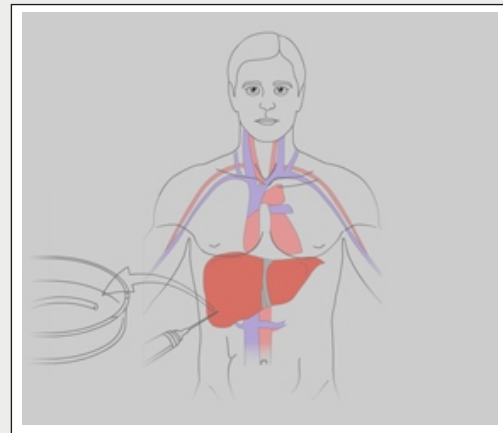
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Types of Liver Biopsy

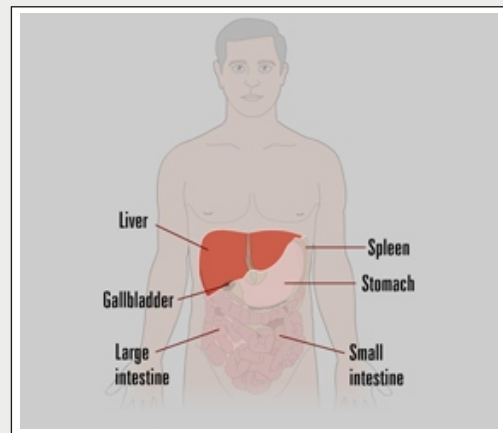
Alternatives to the percutaneous liver biopsy include transvenous, laparoscopic, open surgery, and fine-needle aspiration liver biopsy.

Transvenous Liver Biopsy:

Transvenous liver biopsy is used when a person's blood clots slowly or when excess fluid is present in the abdomen, a condition called ascites.



(Fig.1)



(Fig.2)

Unit 1:

Introduction

During the procedure, patients lie on their back on an X-ray table and a local anesthetic is applied to one side of the neck. If needed, an IV tube is used to give sedatives and pain medication.

A small incision is made in the neck and a specially designed hollow tube called a sheath is inserted into the jugular vein. The doctor threads the sheath down the jugular vein, along the side of the heart, and into one of the hepatic veins, which are located in the liver. To see the veins, the doctor injects liquid contrast material into the sheath.

The contrast material lights up when x rayed, highlighting the blood vessels and showing the location of the sheath. The doctor threads a biopsy needle through the sheath and into the liver and a liver sample is quickly withdrawn. Several samples may be collected, requiring multiple needle insertions. The sheath is carefully withdrawn and the incision is closed with a bandage.

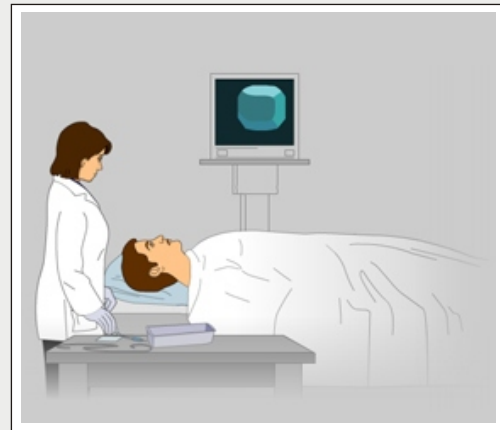
The main drawback to this type of liver biopsy is that the tissue samples are generally small which could affect the analysis of the grading of liver inflammation scarring. The other disadvantage is the cost which can be twice the amount of a percutaneous liver biopsy.

Patients are monitored for 4 to 6 hours for signs of bleeding.

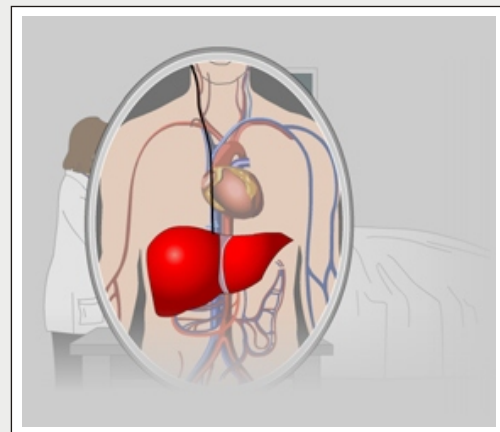
(Refer fig. 3 & 4)

Laparoscopic Liver Biopsy:

Doctors use laparoscopic liver biopsy to obtain a tissue sample from a specific area or from multiple areas of the liver or when the risk of spreading cancer or infection exists. Laparoscopic surgery is a technique that avoids making a large incision by instead making one or a few smaller incisions. The doctor works with special tools, including a small lighted video camera passed through the tiny incisions.



(Fig.3)



(Fig.4)

Unit 1:

Introduction

A doctor may take a liver sample during laparoscopic surgery performed for other reasons, including liver surgery. A biopsy needle is inserted through the cannula and into the abdomen. The needle is inserted into the liver and a tissue sample is quickly withdrawn.

Several samples may be collected, requiring multiple needle insertions. Any excessive bleeding because of the surgery is easily spotted with the camera and treated using an electric probe. After liver samples are collected, the cannula is removed and the incision is closed with dissolvable stitches.

Patients will need to remain at the hospital or outpatient center for a few hours while the sedatives wear off.

(Refer fig. 5)

Open Surgical Liver Biopsy:

This procedure is rarely performed unless there is already an operation being performed in the general area of the liver. A small piece of liver tissue is extracted by needle or a surgical Knife.

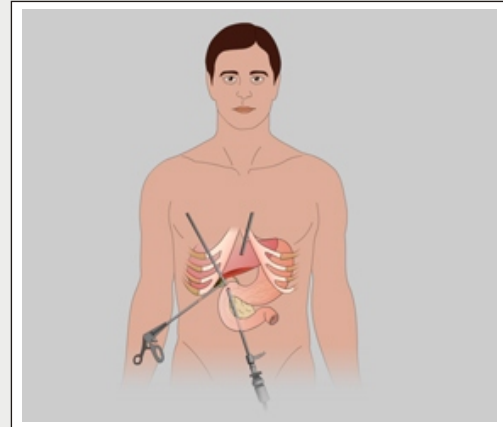
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Fine-Needle Aspiration Biopsy:

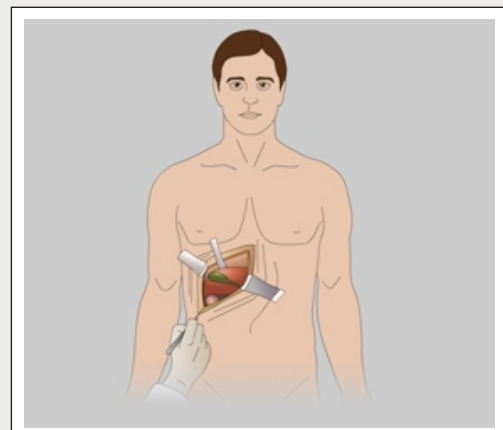
A fine-needle aspiration biopsy is usually performed on patients to examine liver lesions or cancer.

The procedure is performed percutaneously or endoscopically and has a very high accuracy rate since the needle is longer and can be guided to the exact location of the lesion that needs to be examined.

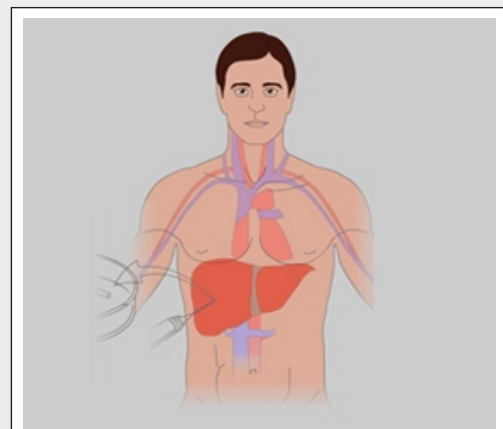
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(Fig.5)



(Fig.6)



(Fig.7)

Unit 2:

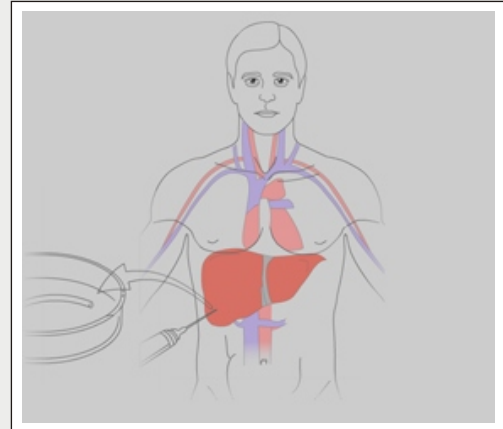
Purpose of Liver Biopsy

When is a Liver Biopsy Performed?

A liver biopsy is performed when a liver problem is difficult to diagnose with blood tests or imaging techniques, such as ultrasound and X-ray.

More often, a liver biopsy is performed to estimate the degree of liver damage, a process called staging. Staging helps guide treatment for liver disease.

(Refer fig. 8)



(Fig.8)

Unit 3:

Procedure

How to Prepare for a Liver Biopsy

At least 1 week before a scheduled liver biopsy, patients should inform their doctor of all medications they are taking. Patients may be asked to temporarily stop taking medications that affect blood clotting or interact with sedatives, which are sometimes given during a liver biopsy.

Medications that may be restricted before and after a liver biopsy include:

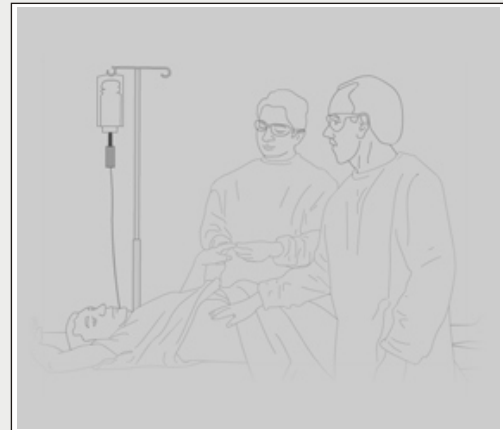
- NSAIDs: Non-steroidal anti-inflammatory drugs, such as aspirin, ibuprofen, and naproxen
- Blood thinners
- High blood pressure medication
- Diabetes medications
- Antidepressants
- Antibiotics
- Asthma medications
- Dietary supplements

Prior to liver biopsy, blood will be drawn to determine its ability to clot. People with severe liver disease often have blood clotting problems that can increase the risk of bleeding after the procedure. A medicine given just before a liver biopsy, called clotting factor concentrates, reduces the risk of bleeding in patients with blood clotting abnormalities.

Patients who will be sedated should not eat or drink for 8 hours before the liver biopsy and should arrange a ride home, as driving is prohibited for 12 hours after the procedure. Mild sedation is sometimes used during liver biopsy to help patients stay relaxed.

Unlike general anesthesia where patients are unconscious, patients can communicate while sedated but then often have no memory of the procedure. Sedatives are often given through an intravenous (IV) tube placed in a vein. The IV can also be used to give pain medication, if necessary, after the procedure.

(Refer fig. 9)



(Fig.9)

Unit 3:

Procedure

How is the Procedure Performed?

All types of liver biopsy remove liver tissue with a needle; however each takes a different approach to needle insertion. The most commonly used technique for collecting a liver sample is percutaneous liver biopsy.

For this method, a hollow needle is inserted through the abdomen into the liver to remove a small piece of tissue.

(Refer fig. 10)

To help find the liver and avoid sticking other organs with the biopsy needle, doctors often use ultrasound, computerized tomography (CT), or other imaging techniques.

Ultrasound is an imaging technique that uses sound waves to create images of the body's internal tissues and organs. Ultrasound images are displayed on a video monitor.

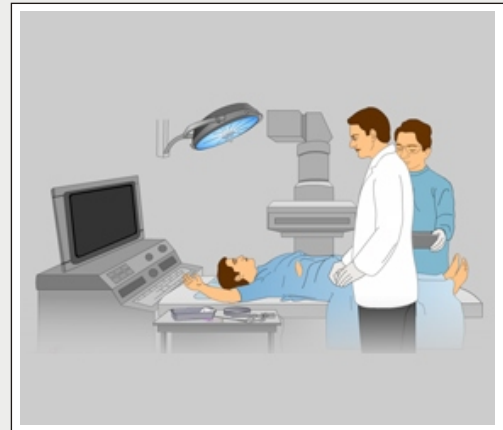
The doctor chooses the best spot on the abdomen for inserting the biopsy needle and then marks the spot with ink. In other cases, ultrasound is used during a biopsy to safely guide the needle through the abdomen and into the liver.

(Refer fig. 11)

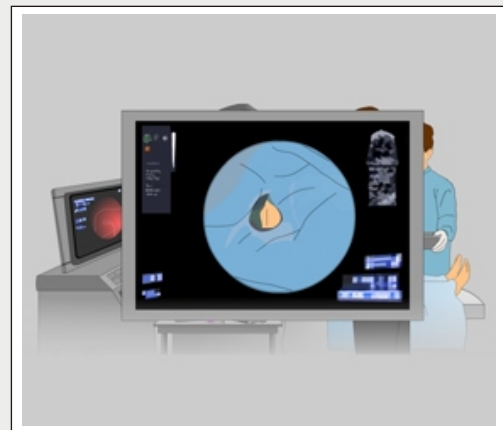
CT is an imaging technique that takes hundreds of cross-sectional X-rays in a few seconds. Putting together the cross-sectional X-ray pictures—like lining up slices of a loaf of bread—a computer forms a whole image of the internal organ.

Some doctors do not use an imaging technique and instead locate the liver by tapping on the abdomen.

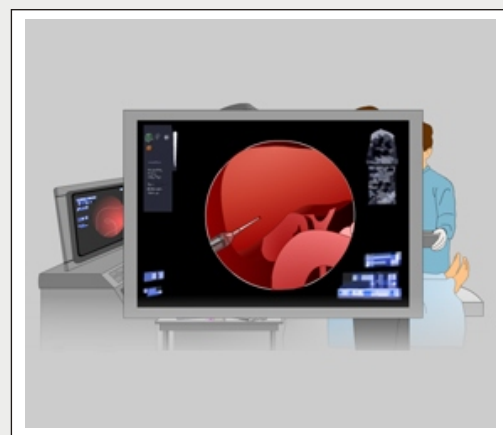
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(Fig.10)



(Fig.11)



(Fig.12)

Unit 3:

Procedure

During the procedure, patients lie on their back on a table with their right hand resting above their head.

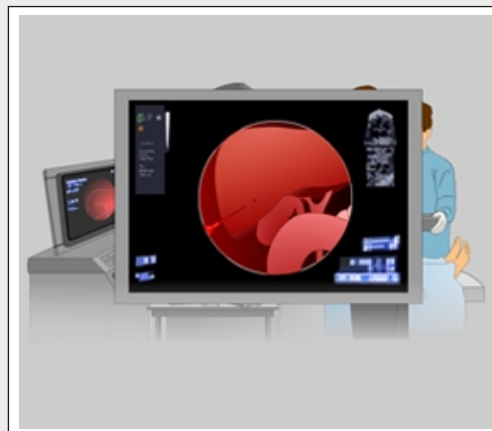
A local anesthetic is applied to the area where the biopsy needle will be inserted. If needed, an IV tube is used to give sedatives and pain medication.

The doctor makes a small incision in the abdomen, either toward the bottom of the rib cage or just below it, and inserts the biopsy needle.

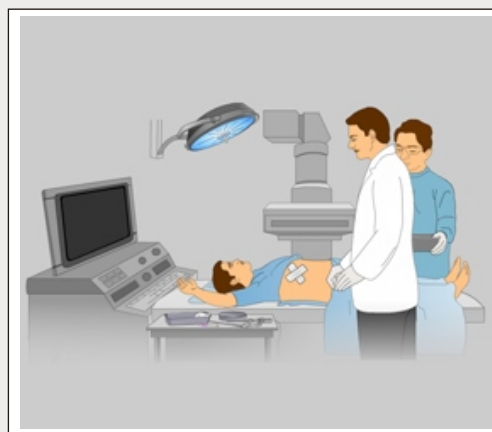
Patients will be asked to exhale and hold their breath while the needle is inserted and a liver sample is quickly withdrawn. Several samples may be collected, requiring multiple needle insertions.

After the biopsy, patients must lie on their right side for up to 2 hours to reduce the risk of bleeding. Patients are then monitored an additional 2 to 4 hours after the biopsy before being sent home.

(Refer fig. 13 & 14)



(Fig.13)



(Fig.14)

What are the Risks?

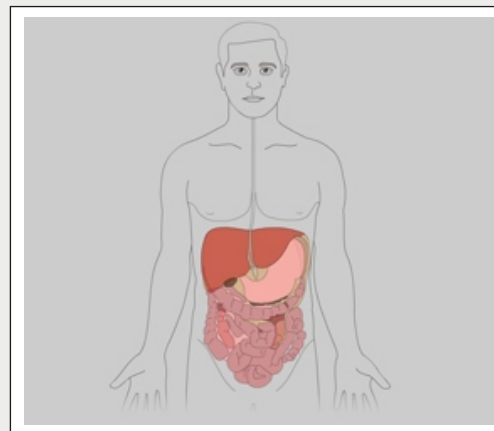
Most patients fully recover from a liver biopsy in 1 to 2 days. Patients should avoid intense activity, exercise, or heavy lifting during this time.

Soreness around the incision site may persist for about a week. Acetaminophen (Tylenol) or other pain medications that do not interfere with blood clotting may help. Patients should check with their doctor before taking any pain medications.

Complications are rare, but possible complications of a liver biopsy include:

- Bleeding from the site of needle entry into the liver
- Puncture of the gallbladder or bile ducts which may result in bile leaking into the abdomen
- Puncture of the lung which may result in a pneumothorax or damage to other nearby structures
- Infection
- Spread of cancer cells, called cancer seeding

(Refer fig. 15)



(Fig.15)

Although every effort is made to educate you on **LIVER BIOPSY** and take control, there will be specific information that will not be discussed. Talk to your doctor or health care provider about any concerns you have about **LIVER BIOPSY**.

YOUR SURGERY DATE

READ YOUR BOOK AND MATERIAL

VIEW YOUR VIDEO /CD / DVD / WEBSITE

PRE - HABILITATION

ARRANGE FOR BLOOD

MEDICAL CHECK UP

ADVANCE MEDICAL DIRECTIVE

PRE - ADMISSION TESTING

FAMILY SUPPORT REVIEW

Physician's Name : _____

Patient's Name : _____

Physician's Signature: _____

Patient's Signature: _____

Date : _____

Date : _____