PROCEDURE

Abdominal wall fat pad biopsy

An abdominal wall fat pad biopsy removes a small fat sample to test for amyloid deposits.

PURPOSE
Detect and identify amyloid deposits

PROCEDURE TYPE
Diagnostic, minimally invasive bedside or outpatient sampling

WHERE IT IS DONE
Outpatient clinic or at the bedside

ANAESTHESIA
Local

HOW LONG IT TAKES
About 15 to 30 minutes

PREPARATION
Usually none; follow fasting and blood thinner instructions

RECOVERY
Same day; no driving if sedated

MAIN RISKS
Bleeding, bruising, infection, scarring, inadequate sample

RESULTS
Several days, sometimes longer for amyloid typing

Overview

An abdominal wall fat pad biopsy removes a small sample of fat from beneath the skin of your abdomen. A laboratory examines the sample for amyloid, an abnormal protein that can collect in tissues and organs.

The sample is usually taken near the belly button using a needle, a punch tool, or a small incision. The exact method affects the sample size, wound care, and whether you will have stitches.

This biopsy is less invasive than taking tissue from an organ such as the heart, kidney, or liver. However, it does not find every case of amyloidosis. A negative result may mean that no amyloid was found in the sample, not that amyloidosis has been completely ruled out.

Why the procedure is performed

Your healthcare team may recommend this biopsy when your symptoms, examination, blood tests, urine tests, scans, or medical history suggest systemic amyloidosis. "Systemic" means that amyloid may be affecting more than one part of the body.

The procedure may be used to:

Finding amyloid is only part of the diagnosis. The type of amyloid also matters because different types have different treatments. Additional laboratory testing, sometimes including mass spectrometry, may be needed to identify the protein in the deposit.

- Look for amyloid deposits
- Avoid or delay a more invasive organ biopsy
- Help identify the type of amyloid when enough material is present
- Support other test results when planning treatment

Who should and should not have it

A fat pad biopsy may be appropriate if your team suspects systemic amyloidosis and wants a tissue sample from a relatively accessible site. It may be especially useful when taking a sample from an affected organ would carry greater risk.

It is not the right test in every situation. The procedure may be delayed or changed if you have:

Do not stop a prescribed blood thinner like warfarin or apixaban on your own. Your treating team will balance the risk of bleeding against the reason you take the medicine.

A fat pad biopsy may also be unsuitable when tissue from a specific organ is needed to explain organ damage or when a larger sample is required. If suspicion remains high after a negative result, another biopsy or a different diagnostic pathway may be recommended.

- An infection, rash, wound, or significant inflammation at the sampling site
- A bleeding disorder that has not been addressed
- A blood-thinning medicine that cannot yet be safely managed
- Too little accessible abdominal fat for the planned technique
- A previous reaction to the proposed local anaesthetic

How to prepare

The treating facility's own instructions take priority because preparation differs with the biopsy method and whether sedation is planned.

Most biopsies performed with local anaesthetic do not require fasting. If you will receive a sedative, you may be told when to stop eating and drinking and to arrange for someone to take you home.

Tell the team about:

Wear loose clothing that does not press tightly against your lower abdomen. Follow any instructions about showering or removing dressings after the procedure.

- Prescription and non-prescription medicines
- Blood thinners, aspirin, and antiplatelet medicines
- Vitamins or herbal products that may affect bleeding
- Bleeding disorders
- Allergies or previous reactions to local anaesthetics
- Skin infection or irritation near the planned biopsy site

What happens during the procedure

You will usually lie on your back. The clinician identifies an area of abdominal fat, often below or beside the belly button, and cleans the skin.

Local anaesthetic is injected to numb the area. This can briefly sting or burn. You should then feel pressure or movement rather than sharp pain.

The sample may be collected in one of several ways:

More than one sample may be taken. Pressure is applied afterward to control bleeding. A needle site may only need a small dressing. A punch or incision may require adhesive strips or stitches.

The tissue is sent to pathology. It may be stained with Congo red, a laboratory dye used to identify amyloid. If amyloid is found, further testing may determine its type.

- Fine-needle aspiration: A needle and syringe remove small fragments of fat
- Punch biopsy: A small circular tool removes a core of skin and underlying fat
- Incisional or excisional biopsy: A short cut is made to remove a larger piece of fat

Recovery and what to expect afterward

Mild soreness, tenderness, or bruising is common. Pain is usually manageable with the pain relief recommended by your healthcare team. Avoid medicines that can increase bleeding unless your team says they are safe for you.

You can usually eat and drink normally after a procedure using local anaesthetic. If you received sedation, follow the facility's instructions about restarting food and fluids.

Keep the dressing clean and dry for the time stated in your discharge instructions. Avoid strenuous exercise, heavy lifting, and activities that pull on the wound until the site has started to heal. Your team will tell you when to shower, bathe, or remove a dressing.

You may be able to drive after local anaesthetic if you feel well and your facility permits it. Do not drive, cycle, operate machinery, drink alcohol, or make important decisions for the stated period after sedation. Arrange a ride home if sedation is planned.

Many people return to desk-based work the same day or the next day. Work involving lifting, bending, or physical effort may require more time, especially if you have stitches.

Risks and possible complications

An abdominal wall fat pad biopsy is less invasive than an internal organ biopsy, but it still has risks.

Possible complications include:

A larger incision generally creates a larger wound than needle aspiration. Your individual bleeding risk also reflects your medicines, health conditions, and the technique used.

- Bleeding or a collection of blood under the skin
- Bruising, swelling, or ongoing tenderness
- Infection at the biopsy site
- Scarring or a small change in skin sensation
- A reaction to local anaesthetic or adhesive
- An inadequate sample or a false-negative result

Results and follow up

A pathologist examines the sample under a microscope. Results are not usually available

immediately. Initial findings often take several days, while specialist testing to identify the amyloid protein can take longer.

Your report may state that amyloid was detected, that none was detected, or that the sample was insufficient. If amyloid is present, your team will interpret the result alongside blood tests, urine tests, scans, and your clinical history.

A negative fat pad biopsy does not always exclude amyloidosis. Routine follow-up may include reviewing the pathology result, completing tests to determine the amyloid type, or discussing whether another tissue sample is needed.

Alternatives

The alternatives depend on what type of amyloidosis is suspected and which organs may be involved.

Ask what information the proposed biopsy is expected to provide, what a negative result would mean, and which test would come next if the sample is inconclusive.

- Fine-needle aspiration instead of a larger biopsy: Leaves a smaller wound but may provide less tissue for detection and typing
- Bone marrow biopsy: Can look for amyloid and abnormal plasma cells, but is more invasive and may still miss amyloid
- Biopsy of an affected organ: May provide a higher-yield sample but can carry greater bleeding or organ-specific risks
- Biopsy from another superficial site: Salivary gland, skin, or other tissue may be accessible, but detection rates differ
- Cardiac imaging pathway for suspected transthyretin amyloidosis: Certain heart scans combined with blood and urine testing can establish some cases without biopsy, but this does not apply to every amyloid type
- Further monitoring before biopsy: Avoids an immediate procedure but may delay a clear diagnosis

When to call your healthcare team

Contact your healthcare team promptly if you develop increasing redness, warmth, swelling, drainage, fever, worsening pain, or a lump that continues to enlarge. Also call if the wound opens or bleeding returns after initially stopping.

Seek urgent medical help for bleeding that does not stop after firm, continuous pressure, rapidly increasing abdominal swelling, fainting, severe weakness, or severe pain.

Call emergency services for trouble breathing, swelling of the face or throat, or other signs of a severe allergic reaction.

Mild bruising, slight tenderness, and a small spot of blood on the dressing are generally handled through routine aftercare unless they worsen.

Common questions

Will I be asleep?

Usually not. Most fat pad biopsies use local anaesthetic, so you are awake but the area is numb. Sedation is uncommon but may be offered for a larger biopsy or particular medical needs.

Can I drive home?

You may be able to drive after local anaesthetic if your facility agrees and you feel comfortable. You must not drive home after sedation.

How painful is it?

The numbing injection can sting briefly. During sampling, you may feel pressure or pulling. Mild soreness and bruising can continue for a few days.

When will I know the result?

Pathology usually takes several days. Results can take longer when specialist testing is needed to identify the amyloid type.

What if the biopsy is negative?

A negative result lowers the chance that amyloid was present in the sampled fat, but it does not rule out amyloidosis in every case. Your team may recommend another biopsy, imaging, or laboratory tests if concern remains.

Will I have stitches or a scar?

Needle aspiration usually does not require stitches. Punch or incisional biopsies may need stitches and can leave a small scar.

Sources

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