PROCEDURE

Urinary incontinence - tension-free vaginal tape

Tension-free vaginal tape is surgery that places permanent mesh beneath the urethra to reduce stress urinary leakage.

PURPOSE
Reduce stress leakage during coughing, exercise, or lifting

PROCEDURE TYPE
Therapeutic minimally invasive surgery using permanent mesh tape

WHERE IT IS DONE
Operating theatre

ANAESTHESIA
General, or local with moderate sedation

HOW LONG IT TAKES
About 30 to 60 minutes

PREPARATION
Urine test, fasting instructions, and medication review

RECOVERY
Usually same day; no driving until safe and cleared

MAIN RISKS
Urinary retention, bladder injury, mesh exposure, persistent pain

RESULTS
Early benefit after healing; follow-up within several weeks

Overview

Tension-free vaginal tape, or TVT, is an operation for stress urinary incontinence. This means urine leaks when pressure in your abdomen rises, such as when you cough, laugh, exercise, or lift something.

During the operation, a narrow strip of synthetic mesh is placed beneath the urethra. The urethra is the tube that carries urine out of the bladder. The tape acts like a supportive sling when pressure increases.

"TVT" usually refers to a retropubic mid-urethral sling. Retropubic means the tape passes behind the pubic bone. Mid-urethral means it supports the middle part of the urethra.

The tape is a permanent implant. It is not the same as the larger sheets of vaginal mesh

previously used to repair pelvic organ prolapse, although both are made from synthetic mesh. Removing a sling later can be difficult and may not remove all the material.

Why the procedure is performed

TVT is intended to reduce stress-related urine leakage. It does not directly treat urgency incontinence, in which a sudden need to urinate is followed by leakage.

You may be offered TVT when stress leakage affects daily life and non-surgical treatment has not helped enough. Non-surgical treatment may include pelvic floor muscle training, weight management where relevant, and changes to fluid or caffeine intake.

Before offering surgery, your healthcare team will normally assess the pattern of leakage. This may include a medical history, pelvic examination, urine test, bladder diary, and a test to see whether coughing causes leakage. Some people need bladder pressure tests, called urodynamics, if the diagnosis is uncertain or their situation is more complex.

Who should and should not have it

TVT may be an option if you have confirmed stress urinary incontinence, understand that the tape is permanent, and feel that the expected benefit outweighs the risks.

It may not be the right operation if your leakage is caused mainly by urgency rather than physical pressure. A sling can sometimes cause new urgency or make existing urgency more noticeable.

The operation may be avoided, delayed, or reconsidered if:

Future pregnancy and childbirth may place new strain on the pelvic floor and affect the result. If you may want to become pregnant, discuss the timing of surgery and non-surgical options.

Previous incontinence surgery does not automatically rule out TVT, but it can change the benefits, risks, and tests needed before treatment.

- You have an active urinary or vaginal infection
- You are pregnant or planning a pregnancy
- You have unexplained vaginal bleeding that needs assessment
- You cannot safely pause certain medicines that increase bleeding
- Previous pelvic surgery, radiation treatment, or urinary problems make the usual route unsuitable

- You are not comfortable having a permanent synthetic implant

How to prepare

Your treating facility's own instructions take priority because preparation can differ according to the anaesthetic and your medical history.

Tell the surgical team about all medicines and supplements you take. This is especially important for anticoagulants and antiplatelet medicines, sometimes called blood thinners. Do not stop them unless the team responsible for your procedure tells you to.

You may be asked to:

Tell the team if you develop fever, urinary burning, unusual vaginal discharge, or another illness before surgery. The procedure may need to be delayed until an infection or other problem has been treated.

- Provide a urine sample to check for infection
- Stop eating and drinking at a stated time
- Shower before coming to the hospital
- Arrange for someone to take you home and stay nearby afterward

What happens during the procedure

TVT may be performed under general anaesthesia, which means you are unconscious. Some centres use regional or local anaesthesia with sedation. Your anaesthesia team will explain what is suitable for you.

A catheter, which is a thin tube, is placed through the urethra to drain your bladder. The surgeon makes a small cut inside the vagina beneath the urethra.

The mesh tape is passed from this vaginal cut, behind the pubic bone, and out through two small cuts in the lower abdomen. It is positioned without being pulled tightly. Your own tissue later grows around the mesh and helps hold it in place.

The surgeon usually examines the inside of your bladder with a small camera. This is called cystoscopy. It checks whether the bladder or urethra was injured while the tape was passed.

The tape ends are trimmed, and the cuts are closed. The operation commonly takes about 30 to 60 minutes.

Recovery and what to expect afterward

Mild pelvic, vaginal, or lower abdominal pain is common for the first few days. You may also notice light vaginal bleeding or discharge. Pain relief will be provided or recommended.

You can usually drink and eat once you are awake and do not feel sick.

Before leaving, you will normally be asked to urinate so the team can check that your bladder empties adequately. If it does not, you may need a catheter temporarily. Some people stay overnight for further monitoring.

Walking gently is encouraged, but avoid strenuous exercise, heavy lifting, and activities that put pressure on the pelvic floor while healing. Follow your surgeon's instructions about bathing, swimming, tampons, and vaginal sex. Restrictions often continue for several weeks.

Do not drive home. After an anaesthetic or sedation, arrange for another adult to drive you. Resume driving only when you are no longer taking medicines that impair alertness, can make an emergency stop comfortably, and meet your surgical team's and insurer's requirements.

The time away from work reflects both your recovery and your job. A desk-based role may be possible sooner than work involving lifting, prolonged standing, or strenuous activity.

Risks and possible complications

Many people recover without a serious problem, but TVT has short-term and long-term risks. Because the tape is permanent, some complications can appear months or years later.

Possible complications include:

A bladder injury found during surgery can often be managed by repositioning the tape and leaving a catheter in temporarily. Persistent difficulty urinating may require the tape to be loosened, divided, or partly removed.

Mesh complications can require further surgery. Complete removal may not be possible, and removal does not always resolve pain or urinary symptoms. These points should form part of your consent discussion.

- Bleeding, wound infection, or urinary tract infection
- Difficulty emptying the bladder
- Injury to the bladder or urethra during tape placement
- New or worsening urinary urgency
- Continued leakage or leakage that returns later

- Mesh becoming exposed through the vaginal tissue
- Mesh wearing into the bladder or urethra
- Persistent pelvic, vaginal, groin, or sexual pain
- Pain during sex
- Rare injury to blood vessels, bowel, or other pelvic structures
- Blood clots or complications related to anaesthesia

Results and follow up

You may notice less leakage soon after surgery, but swelling and temporary bladder changes can make the early result difficult to judge. Healing over the following weeks gives a clearer picture.

Your follow-up appointment may include questions about leakage, urgency, pain, urine flow, bladder emptying, and wound healing. There is normally no laboratory or pathology result to wait for.

Contact your healthcare team before the planned appointment if you have troublesome symptoms. Later problems such as vaginal mesh exposure, recurrent infections, pain during sex, or difficulty urinating also need assessment, even if surgery was years ago.

Alternatives

You do not have to choose TVT. Reasonable alternatives include:

Doing nothing for now is also an option if leakage is manageable and no concerning condition has been found.

- Pelvic floor muscle training: avoids surgery and mesh, but takes regular practice and may not control more severe leakage
- Continence devices or pessaries: provide support without surgery, but need fitting, cleaning, and ongoing use
- Pads or absorbent underwear: manage leakage without procedural risk, but do not correct the underlying support problem
- Urethral bulking injections: involve a smaller procedure and quicker recovery, but benefits may be less durable and repeat injections may be needed

- Colposuspension: lifts tissue near the bladder neck without mesh, but requires abdominal or keyhole surgery and usually has a longer recovery
- Autologous fascial sling: uses a strip of your own tissue instead of synthetic mesh, but involves an additional incision and a greater risk of difficulty emptying the bladder
- Another type of mid-urethral sling: uses a different route but still involves permanent mesh and has a different pattern of risks

When to call your healthcare team

Seek urgent medical advice if you cannot urinate, develop fever with worsening pelvic pain, have heavy vaginal bleeding, or notice increasing redness, swelling, pus, or foul-smelling discharge.

Seek emergency help for chest pain, sudden shortness of breath, fainting, or a painful swollen leg.

Contact your healthcare team routinely if leakage is not improving, urgency becomes troublesome, your urine stream remains weak, or you develop recurrent urinary infections. Arrange an assessment for persistent pelvic pain, pain during sex, vaginal bleeding after healing, or something that feels like mesh in the vagina.

Common questions

Will I be asleep?

Many TVT operations use general anaesthesia, so you are asleep. Local or regional anaesthesia with sedation may also be offered. Ask which method your facility plans to use.

Can I drive home?

No. Anaesthesia, sedation, pain, and restricted movement can make driving unsafe. Arrange for another adult to take you home.

How painful is it?

Mild to moderate vaginal, pelvic, or lower abdominal soreness is expected at first. Pain should gradually improve. Severe or worsening pain needs medical advice.

When will I know if it worked?

You may notice improvement when you begin moving and coughing normally. The result is clearer after swelling settles and healing progresses over several weeks.

Will the tape need to be replaced?

The tape is designed to remain permanently. It is not routinely replaced, but further treatment may be needed if leakage returns or a mesh complication develops.

Can I still have an MRI scan?

Polypropylene mid-urethral mesh does not usually prevent MRI scanning. Always tell imaging staff that you have an implanted sling.

Sources

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