CONDITION

Intraductal papilloma

An intraductal papilloma is a noncancerous growth inside a breast milk duct.

WHAT IT IS
Benign growth inside a breast milk duct

BODY SYSTEM
Breasts

MAIN SYMPTOMS
Bloody or clear nipple discharge, breast lump, tenderness

WHAT CAUSES IT
Unknown; abnormal growth of duct-lining cells

HOW IT IS DIAGNOSED
Core needle or vacuum-assisted biopsy after breast imaging

MAIN TREATMENT
Monitoring or removal, based on biopsy findings

CAN IT BE CURED?
Yes, removal eliminates the identified growth

IS IT AN EMERGENCY?
No, but bloody discharge needs prompt assessment

LONG-TERM OUTLOOK
Usually excellent after appropriate assessment and management

Overview

An intraductal papilloma is a small, noncancerous growth inside one of the breast's milk ducts. Milk ducts are narrow tubes that carry milk toward the nipple. Although the name includes "papilloma," this is not a contagious wart and is not caused by a wart virus.

A papilloma is made from gland and supporting tissue covered by cells from the duct lining. It may be found because it causes nipple discharge or a lump. Some are discovered unexpectedly during breast imaging or a biopsy performed for another reason.

A solitary papilloma is a single growth, often in a larger duct close to the nipple. Multiple papillomas usually develop in smaller ducts farther from the nipple.

Most intraductal papillomas are benign, meaning they do not invade nearby tissue or spread elsewhere. However, a biopsy is important because some papillomas contain atypia -cells that

look abnormal under a microscope. Occasionally, cancer or a precancerous change can be present near a papilloma. Proper imaging and tissue sampling help separate these situations.

Symptoms

Some intraductal papillomas cause no symptoms and are found on a mammogram or ultrasound.

When symptoms occur, they may include:

Discharge from one duct in one breast is more typical of a solitary papilloma. Multiple papillomas farther from the nipple may be more likely to appear as small lumps or imaging findings.

These symptoms have several possible causes. Most nipple discharge is not due to breast cancer, but new spontaneous or bloody discharge should still be assessed.

- Clear, blood-stained, pink, or brown discharge from one nipple
- A small lump behind or near the nipple
- Breast tenderness or discomfort around the lump
- Discharge that appears without squeezing the nipple

Causes and risk factors

The exact cause of intraductal papilloma is unknown. It develops when cells and supporting tissue grow within a milk duct. It is not caused by infection, injury, sexual contact, or anything you did.

Papillomas are diagnosed most often in adults during middle age, although they can occur at other ages. They can also occur in men, but this is uncommon.

There is no clear inherited pattern for an ordinary intraductal papilloma. Having one does not mean that your children will develop one.

The future risk linked to a papilloma is influenced by its biopsy findings. A papilloma that contains atypical cells is more important as a breast cancer risk marker than a solitary papilloma without atypia. Multiple papillomas may also require closer assessment than a single central papilloma.

Diagnosis

Assessment usually begins with questions about the discharge or lump. A healthcare professional may ask whether discharge comes out by itself, whether it is from one or both breasts, and whether it comes from a single opening in the nipple. They will examine the breasts and nearby lymph nodes.

Breast imaging may include:

The choice of imaging is based partly on age, symptoms, pregnancy status, and previous test results. Very small papillomas may not be clearly visible on every type of scan.

A tissue sample is needed to confirm the diagnosis. This is usually collected with a core needle biopsy , which removes small pieces of tissue, or a vacuum-assisted biopsy , which uses gentle suction to collect a larger sample. Local anaesthetic is used to numb the area.

A pathologist examines the tissue under a microscope. The report should state whether the papilloma contains atypia or cancerous cells.

The clinical examination, imaging, and biopsy results should agree. This is called concordance . If the biopsy result does not explain a suspicious scan or symptom, further sampling or surgical removal may be advised even when the initial sample appears benign.

Testing nipple fluid alone cannot reliably exclude cancer and does not replace appropriate imaging and biopsy.

- Ultrasound , which uses sound waves to look inside the breast and may show a growth within a widened duct
- Diagnostic mammography , which uses low-dose X-rays to examine a symptom or abnormal finding
- Breast MRI , which may be used when the cause of suspicious discharge remains unclear after other imaging

Treatment and management

Treatment is based on the biopsy findings, imaging appearance, symptoms, and whether the results are concordant.

Some small papillomas without atypia can be monitored rather than removed. This may be considered when the needle biopsy sampled the area adequately, the pathology matches the imaging, and there are no other concerning findings. Monitoring usually involves planned breast imaging and follow-up rather than simply ignoring the finding.

A papilloma may be removed using a vacuum-assisted procedure. A needle-like device is

guided into the area with imaging, and multiple tissue samples are taken until the visible lesion has been removed. This usually leaves a smaller scar than open surgery.

Surgical removal may be recommended when:

During surgery, the papilloma and part of the affected duct are removed. If the exact duct causing discharge can be identified, only that duct may need removal. Sometimes a group of ducts beneath the nipple is removed. The tissue is then examined fully to check for atypia or cancer that may not have appeared in the needle sample.

Medicines do not remove an intraductal papilloma. Antibiotics like amoxicillin or doxycycline are not useful unless there is a separate bacterial infection.

- The biopsy shows atypia or possible cancer
- The imaging and biopsy findings do not match
- The biopsy may not have adequately sampled the area
- The papilloma is causing ongoing bloody or troublesome discharge
- The lesion is large, growing, multiple, or difficult to assess
- You prefer removal after discussing the options

Complications

The main concern is that a needle biopsy samples only part of a lesion. Atypia, ductal carcinoma in situ-a non-invasive form of breast cancer-or invasive cancer may occasionally be found when more tissue is removed. This is more likely when the original biopsy contains atypia or does not match the imaging.

A papilloma without atypia is not itself breast cancer. Its effect on future breast cancer risk is generally small when it is solitary and fully assessed. Atypical cells, multiple papillomas, family history, and other breast findings can change the overall risk assessment.

Biopsy and surgery can cause bruising, pain, bleeding, infection, scarring, or temporary changes in breast sensation. Surgery near the nipple may affect its shape, sensation, or the ability of ducts in that area to carry milk.

A papilloma can occasionally recur, or another papilloma can form in a different duct.

Prevention

There is no proven way to prevent an intraductal papilloma. Its cause is not known, and it is not

clearly linked to a specific avoidable behaviour.

Routine breast awareness and recommended breast screening cannot prevent a papilloma, but they can help identify breast changes that need assessment. Avoid repeatedly squeezing the nipple to check for discharge, as this can keep discharge going and make the pattern harder to assess.

Living with it and what to expect

An intraductal papilloma is usually manageable and does not spread through the body. What happens over the following months depends mainly on whether the biopsy shows atypia, whether symptoms continue, and whether monitoring or removal is chosen.

If monitoring is appropriate, you may have repeat imaging to confirm that the area remains stable. Keep those appointments even if you feel well, because imaging changes may occur without symptoms.

After vacuum-assisted or surgical removal, bruising and soreness usually settle as the area heals. Nipple discharge caused by the removed papilloma often stops, although another cause may need to be considered if it continues.

Removal generally deals with the identified papilloma. It does not prevent a new growth from forming in another duct. Your future screening plan may stay routine or may be adjusted if the pathology shows atypia or you have other breast cancer risk factors.

Most people continue their usual work, exercise, relationships, and daily activities. If future breastfeeding matters to you, discuss this before duct surgery. Removing one duct may have limited effect, while removing several ducts beneath the nipple can reduce milk flow from that breast.

When to get medical help

Arrange a medical appointment if you notice:

These changes are not usually emergencies, but they should be assessed promptly rather than watched at home.

After a biopsy or operation, seek urgent medical advice for increasing redness, warmth, swelling, worsening pain, pus, fever, or a wound that opens. These may be signs of infection or another procedure-related complication.

Seek emergency care for bleeding that does not stop after firm, continuous pressure, fainting,

severe breathing difficulty, or signs of a serious allergic reaction after a procedure.

- New nipple discharge, especially if it is bloody or clear
- Discharge that comes out without squeezing
- Discharge from only one breast or one nipple opening
- A new breast or underarm lump
- Nipple inversion, skin dimpling, or a persistent nipple rash

Common questions

Is an intraductal papilloma cancer?

No. An intraductal papilloma is a benign breast growth. A biopsy is still needed because atypical or cancerous cells can sometimes occur within or near a papilloma. The pathology report provides this distinction.

Can an intraductal papilloma turn into cancer?

A papilloma does not usually follow a simple path of turning into cancer. The more immediate issue is whether atypia or cancer was already present but not captured in the first sample. A papilloma containing atypia is also a marker of higher future breast cancer risk.

Does every intraductal papilloma need surgery?

No. Selected papillomas without atypia may be managed with imaging follow-up or removed by vacuum-assisted biopsy. Surgery is more likely when atypia is present, the results do not match, symptoms continue, or the area was not adequately sampled.

Why does a papilloma cause bloody nipple discharge?

Papillomas contain delicate supporting tissue and small blood vessels. Friction or pressure inside the duct can make these vessels bleed, mixing blood with the duct fluid. Bloody discharge needs assessment because papilloma is only one possible cause.

Will an intraductal papilloma go away on its own?

It may remain stable, but it cannot be assumed to disappear. Some papillomas can be safely monitored after a thorough biopsy, while others should be removed. The decision is based on the complete imaging and pathology findings.

Can I breastfeed after having one removed?

It may still be possible. The effect depends on how many ducts were removed and where the operation was performed. If future breastfeeding is important to you, raise this before surgery so the likely effect can be discussed.

Sources

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- Breast Cancer Now. "Intraductal papilloma."
- American College of Radiology. "ACR Appropriateness Criteria: Evaluation of Nipple Discharge."
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