Fluid in the Arms or Legs, or Lymphedema

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Lymphedema is the abnormal buildup of fluid in an arm or leg due to a blockage in the lymphatic system. The lymphatic system helps to fight infections and other diseases and carries lymph (a colorless fluid containing white blood cells, an important part of the immune system) through the body. There are two types of lymphedema: primary and secondary. Primary lymphedema is a rare, natural disorder of the lymph system. More often, people with cancer develop secondary lymphedema, usually as a side effect of their treatments.

Lymphedema can be acute (lasting no more than six months) or chronic (lasting years). Acute lymphedema usually develops a few days or weeks after radiation therapy or surgery and lasts less than six months. As the body heals, and normal lymph fluid flow resumes, the swelling usually goes away. Chronic lymphedema occurs when the lymphatic system changes and can no longer meet the body's demands for fluid drainage. This can happen immediately after surgery [2] or radiation therapy [3], or months or even years after cancer treatment. There is no cure for chronic lymphedema; however, there are ways to manage this condition.

Symptoms

People with lymphedema may experience the following symptoms:

- Slow, painless swelling that begins in the hands or feet and progresses toward the trunk (middle of your body)
- "Heavy" feeling in the arms or legs
- Rings, watches, or clothes become too tight
- Tight or shiny skin
- Skin that does not indent at all when pressed, or hardened skin
- Hyperkeratosis (thicker skin)
- Skin that may look like an orange peel (swollen with small indentations)
- The development of small warts or blisters that leak clear fluid

If you are concerned about any of these symptoms, please talk with your doctor.

Causes

The most common causes of secondary lymphedema include the following:

- Surgery to remove the lymph nodes, particularly in the underarm, groin, or pelvic areas. Surgical removal of these lymph nodes is common in treating breast cancer, melanoma, prostate cancer, testicular cancer, bladder cancer, and gynecologic cancers.
- Radiation therapy to the lymph nodes
- Metastatic cancer (cancer that has spread from its primary location)
- Bacterial or fungal infection
- Injury to the lymph nodes
- Other diseases involving the lymph system

Diagnosis

Some doctors may be able to diagnose lymphedema by observing symptoms alone. However, some tests may be needed to confirm a diagnosis, plan treatment, and rule out other causes of lymphedema.

- The doctor may measure your arms or legs to monitor swelling or may calculate the volume of fluid that has built up by placing the arm or leg into a water tank.
- Ultrasound [4] (an imaging test that uses sound waves to create a picture of the inside of the body) helps the doctor see the flow of the lymph system.
- Lymphoscintigraphy is a reliable test for confirming a diagnosis of lymphedema. This test produces a picture of the lymphatic system and shows the pattern of lymph drainage.
- A computed tomography (CT or CAT) scan [5] creates a three-dimensional picture of the inside of the body with an x-ray machine, and a magnetic resonance imaging (MRI) test [6] uses a magnetic field instead of an x-ray to produce detailed images of the body. These tests show the placement and pattern of the lymph system and whether a tumor or other mass is obstructing the flow of the lymph system.

It is important to make sure that other illnesses (such as late-onset primary lymphedema) are not causing the swelling. The doctor may perform other tests to rule out heart disease, blood clots, infection, liver or kidney failure, or an allergic reaction.

Grading

Doctors describe lymphedema according to its grade, a system that classifies the lymphedema from mild (Grade I) to severe (Grade III):

- Grade I means that the skin indents when it is pressed, elevating the affected limb helps reduce the swelling, and there is no visible evidence of scarring.
- Grade II means that the skin does not indent when it is pressed, elevating the affected limb does not help the swelling, and there is moderate to severe scarring.
- Grade III is irreversible lymphedema. The skin has hardened, the affected body part has swelled in size and volume, and the skin has changed texture.

Management and treatment

Relieving side effects, also called symptom management, palliative care [7], or supportive care, is an important part of cancer care and treatment. Talk with your health care team about any lymphedema symptoms you experience, including any new symptoms or a change in symptoms.

Treatments for lymphedema are designed to reduce swelling, prevent it from getting worse, prevent infection, and improve the use and appearance of the affected limb. Talk with your doctor about the best way to manage lymphedema. Treatments for lymphedema include the following:

Elevation. Keeping an affected limb elevated often helps to reduce swelling and encourages draining through the lymph system. However, it is often not practical to maintain an elevated position over time.

Massage. A specialized technique called manual lymphatic drainage may help reduce swelling. For best results, begin massage treatments as close to the onset of lymphedema as possible. A member of your health care team can refer you to someone trained in this technique.

Exercise. Exercising usually improves the flow of the lymph system, strengthens muscles, and improves the body's ability to absorb protein. Patients with lymphedema should wear a compression garment or bandage (see below) when exercising.

Compression. Compression garments or bandages apply pressure to the limb and encourage draining through the lymph system and are useful in preventing further swelling. There are different types of compression treatments:

- Compression bandages wrap the affected limb and are usually used during the treatment phase because the limb changes size.
- Compression garments are elastic sleeves for the arm or leg that can be custom-fitted. These are generally used during the maintenance phase once the size of the limb stays the same.
- Pneumatic compression uses machine-pressurized gas or air to apply pressure to the affected limb.

All compression devices apply the most pressure farthest from the body and less pressure closer to the body.

Hygiene. Preventing infection from developing around lymphedema helps stop the condition from getting worse. Washing the area often with soap and using alcohol-free lotions may help. Your doctor may also prescribe antibiotic or antifungal drugs.

Low level laser treatments (LLLT). A small number of clinical trials (research studies in people) have found LLLT could provide some relief of lymphedema after a mastectomy (removal of the breast), particularly in the arms.

Treatments that are not usually recommended include the following:

- Diuretics, medicines that lower the amount of water in the body
- Surgery to repair the lymph system

More Information

After Treatment for Breast Cancer: Preventing Lymphedema [8]

Lower Extremity Lymphedema: Leg Swelling After Cancer Treatment [9]

Managing Side Effects [10]

Additional Resources

LIVE**STRONG**: Lymphedema [11]

National Cancer Institute: Lymphedema [12]

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Links:
[1] http://www.cancer.net/about-us

[2] http://www.cancer.net/node/24720
[3] http://www.cancer.net/node/24728
[4] http://www.cancer.net/node/24714
[5] http://www.cancer.net/node/24486
[6] http://www.cancer.net/node/24578
[7] http://www.cancer.net/node/25282
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[11] http://www.livestrong.org/Get-Help/Learn-About-Cancer/Cancer-Support-Topics/Physical-Effects-of-Cancer/Lymphedema
[12] http://www.cancer.gov/cancertopics/pdq/supportivecare/lymphedema