

Vocabulary

Here is a list of basic words (and their definitions as they pertain to your surgery) that you may hear throughout your treatment with us.

Flap- a piece of tissue that is completely detached from one part of the body and re-connected in another part of the body using microsurgery. A flap may contain all or a combination of the following: bone, skin, fat, muscle along with its own artery and vein. A flaps viability is dependent upon the anastomosis between the recipient and donor vessels.

Graft- a piece of tissue (skin, bone, vessel, fat) that is removed from one part of the body and its native blood supply and placed onto another part of the body. A graft is dependent upon the blood supply of its recipient site.

Donor site- the area of the body from which a flap or graft is removed

Recipient site- the area of the body to which a flap or graft is placed

Plate- a surgical device used to augment and support bone. These are usually made of titanium and are used in trauma to fixate a fracture or in reconstruction to replace a piece of missing bone.

Microsurgery- specialized, intricate surgery. “Micro” indicates the use of miniaturized instruments, very small suture and a microscope. Microsurgery is used to operate on small, delicate structures such as arteries and veins.

Anastomosis- a cross-connection between adjacent channels, tubes, fibers, or other parts of a network. In a surgical sense, it refers to establishing a new connection between nerves and/ or vessels

Vessel- a vein or an artery. These structures carry blood to or away from the heart, respectively

Defect- in terms of cancer and reconstruction, “defect” refers to the space left after the tumor has been removed.

VSP- “Virtual surgical planning” is a term you may hear and it refers to the ability for us to create custom plates with a computer based on your radiology scans of the face and legs. We use this technique with fibula flaps to help accurately create plates unique to your defect. Representatives from ENT, Plastics and the plating company participate in these planning sessions and allow efficient creation of the plate we will be using in your case.

[What is a plastic surgeon doing in my cancer surgery?](#)

The treatment of the cancer patient is a complex and sometimes overwhelming experience. In the case of head and neck cancer, evaluation and consideration by multiple disciplines is usually required. This means that you will need to visit physicians from the surgical, medical and oncological services. As an inpatient and in the days and weeks following your surgery please expect to be evaluated by representatives of the critical care, anesthesia and in some cases the ocular and swallowing departments. Members of these teams will include nurses, residents, fellows and physicians in both the in and outpatient settings.

Part of your surgical experience will include meeting with a Plastic Surgeon.

You may be wondering why you need to see a Plastic Surgeon for your cancer care. The answer is that there is a subset of plastic surgery that specializes in reconstruction. These surgeons care for everything from burn victims to trauma and cancer patients with significant defects. In terms of cancer care, it is the job of the Reconstruction service to “fix” or reconstruct the defect created by the removal of the tumor. In some cases, a tumor has become so large that the defect created by removing it requires a special type of closure. In other cases, the location of the tumor is difficult to close because of the type of tissue being removed, an example of this includes a tumor involving the lip or the nose. The goal of reconstruction surgery in head and neck cancer is to 1) patch the hole created by tumor removal to divide the oral cavity from the delicate neck structures and 2) maintain the structural support/profile provided by the facial bones. It is important to remember that reconstruction can not always restore or maintain **function**. An example of this is a tumor involving the tongue.

A defect can be reconstructed with either a flap or a graft.

A graft is a piece of healthy skin, bone, or sometimes fat that is taken from one part of the body (donor site) to replace diseased or injured tissue that has been removed from another part of the body (recipient site). A graft is taken from its original blood supply and uses that of its recipient site to survive.

A free flap is a piece of muscle, fat, skin, bone (or a combination of these) **in addition to an artery and vein** that is removed completely from one part of the body (donor site) and transferred to another part of the body (recipient site). The plastic surgeon uses microsurgery to create a connection, or anastomosis, between the artery and vein from the flap to an artery and vein near the defect.

Sometimes a defect can be reconstructed using a local flap. A local flap differs from a free flap in that a local flap (again a piece of tissue containing fat, skin, muscle or a combination of these) keeps its original blood supply and can be rotated or flipped in such a way to fill the defect.

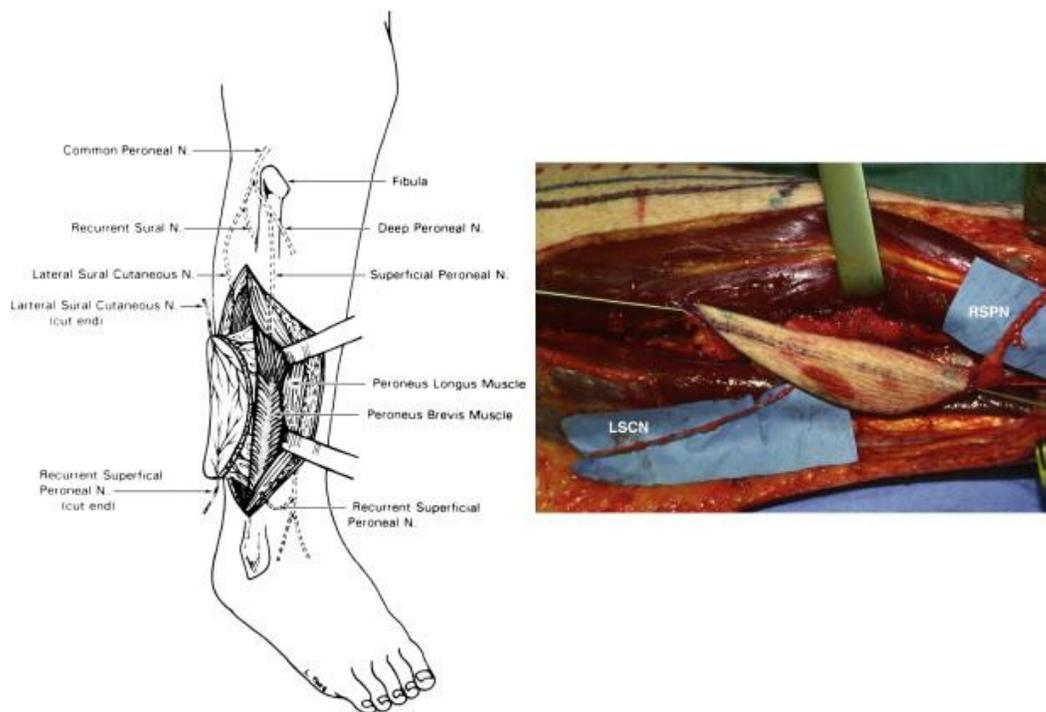
There are some reconstructions that require additional support in the form of surgical hardware such as a “plate” or “implant”. These implants are made with surgical metal (usually titanium) and are meant to stay in the body long-term. In some instances, as is the case with infection or exposure, the hardware does need to be removed.

Some options....

fibula flap- This free flap is used for reconstruction of bone, most commonly for the mandible or jaw bone. The fibula is one of two bones found between the knee and ankle joints. It is the smaller of the two bones. When taking the fibula bone, an island of skin and fat as well as an artery and vein are also harvested. This bone is not removed in its entirety and thus is not missed for ambulation or stabilization purposes. The missing bone in the leg does not require any additional support or plating but will require the use of a CAM boot on the lower extremity for 2 weeks after surgery. You will be “touch down weight bearing” for 5 days post op. The free fibula flap, once placed into the defect, will require additional support and stabilization with a plate. The plates are created with your personal data obtained by a CT angiogram of your lower extremities. This scan should be done at least 2 weeks prior to your surgery to allow adequate time for surgical planning. We generally recommend 6 weeks of compression of the lower leg using an ACE bandage. You will be shown how to do this when the time is appropriate

The wound created from this flap harvest is usually closed using a skin graft

Risks: Some risks of a free fibula flap, specifically, include inability to flex great toe, leg swelling, non-union, mal union, open wounds/wound healing problems, prolonged tube feeding, difficulty with speech or swallowing, need for additional surgery including hardware removal.



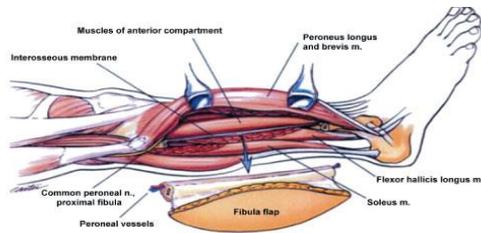
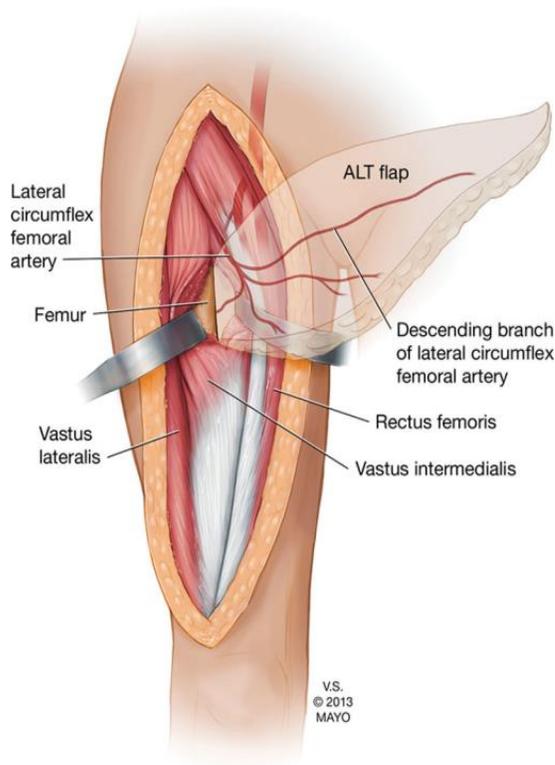


Figure 3- Lateral view of the right leg. Note the proximity of the common peroneal nerve to the proximal osteotomy, according to Anthony and Foster⁶ (1996)

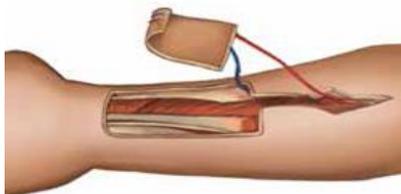
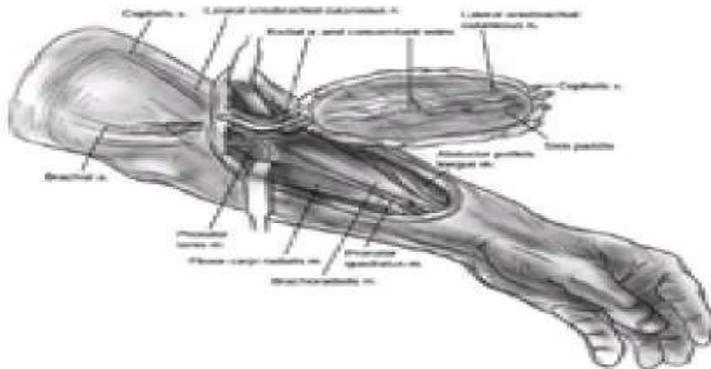
ALT or anterolateral thigh flap- This is a fasciocutaneous free flap. “fascio” (fascia) is a thin tissue enclosing muscle and “cutaneous” meaning skin. This flap is utilized mostly in cases of defects only involving soft tissues but can be used for some boney defects, when indicated. This flap is harvested from the thigh and in most cases the wound created from the absence of this tissue can be closed in a straight line.

Risks: seroma or hematoma in the thigh, thigh numbness and/or weakness, open wounds/wound healing problems, need for additional surgery, prolonged tube feeding, need for future surgery



Radial forearm flap- This is a free flap based on the radial artery, which is 1 of 2 main arteries in the forearm. This flap is used for smaller intraoral defects that require a thinner flap. Like the fibula flap donor site, the radial forearm flap donor site wound is closed using a skin graft. This option will require the use of a wrist splint for 2 weeks post operatively.

Risks: hand cold intolerance, tingling or numbness of the fingers, open wounds/wound healing problems, need for additional surgery, difficulty with speech or swallowing, prolonged tube feeding.



Radial Forearm Flap

Skin graft- a super thin piece of skin usually taken from your thigh or buttocks and placed onto a wound bed. This area is then secured using a pressure type dressing or a wound VAC. This will be used in some cases to reconstruct the defect created from the flap donor site. It will result in a post card sized area of depigmented skin on the thigh or buttocks.

In all cases of flaps there is a (small) chance that part or all the grafts/flaps do not survive. This is usually due to a blood flow problem- either blood is not flowing to or flowing out of the flap properly. The flap will be monitored very closely for the first couple of days after your surgery to ensure that any problem with the blood flow is caught quickly. In many cases of flap compromise, we can take the flap back to the OR to identify the problem.

What to expect Pre and post-operative course

Your surgery will start very early in the morning. You should plan to be in the hospital at 500 am. You will be contacted the day before your surgery to give you instructions for parking and anesthesia instructions. **NOTE: If you are scheduled for a radial forearm free flap it is important that you tell all healthcare workers to NOT use that arm for any blood pressures, lab draws or needle sticks on the day of or days leading up to your surgery (you should have been provided with a pink "DO NOT USE THIS EXTREMITY" bracelet prior to your surgery, if you have not please contact our office at 412-624-2924).** The surgery can be very long, sometimes lasting up to 10- 12 hours. It is not uncommon for the surgery to last late into the evening.

You will spend your first night in the ICU. This allows very close monitoring of the blood flow of your flap. Blood flow is of the utmost importance in the survival of a free flap. The surgical connection (anastomosis) between your neck vessels and those of the flap (either from thigh, leg or arm) that has been created by your surgeon allows blood to flow into and out of the flap. If for any reason this blood flow is altered, the flap may become compromised. Blood flow may become altered through either kinking or clotting of the vessels. To mitigate these factors, you will receive medication directly into the anastomosis to thin the blood and prevent clotting. This is done one time, intraoperatively. You will also receive medication overnight to help keep you sedated. This allows optimal head and neck positioning and ultimately lessens tension on the anastomosis.

It is important to let your Plastic Surgeon know the following: 1. personal or family history of blood clots in your legs or your lungs 2. personal history of multiple miscarriages 3. family history (mother, sisters, daughters) of multiple miscarriages 3. Any history of clotting and/or bleeding disorders.

While in the ICU, nurses and/or doctors will be monitoring your flap closely. This is done by way of an implantable Doppler and will require you to open your mouth every hour or so. It can become quite bothersome for you as a patient but is essential so that we can quickly detect any problems with the flap.

Transfer to a regular floor may occur as early as post op day #1. Once this happens you will be encouraged to be up out of bed and into a chair, possibly even bearing weight with the assistance of a boot, if indicated. You will have various suction tubes called JP or Jackson Pratt drains. These are handled by the Plastic Surgery team and will require daily stripping, emptying and documentation. We ask that you please bring your written documentation to your first post-operative appointment. This information is required to determine which drains can and should not be removed. Along with drain's, you will have multiple incisions and wound sites. This is in addition to the trach care, which is guided by the ENT team.

A typical hospital stay is anywhere from 7-10 days but may last longer in some cases. It is not uncommon to develop a post operative leak or infection. If either of these develop, an extended hospital stay may be indicated so that they can be treated either medically or surgically.

While in the hospital, you will be assessed by the surgical, medical, nursing and social work teams to ensure an efficient and safe discharge. It may be that your discharge plans include a stay in a skilled nursing facility or rehab center. This is a fluid decision that will be made with the help of input by all your teams. In most cases, patients are discharged with JP drains, wound care instructions and trach care instructions.

Much like in the hospital, the ENT and Plastic Surgery teams will have different roles once you are discharged. It can sometimes become overwhelming and difficult to know which team handles what, but as a general rule Plastic surgery can answer questions about wound healing, dressings, JP drains, boots/splints and activity restrictions.

Please know that we are a team of surgeons and physicians dedicated to the care of head and neck cancer patients. From the Plastic surgeon to the ICU nurses, we have seen and cared for many free flap patients and are skilled in this very intricate and specialized surgery subset.

We like to make your experience better! Please provide us feedback as to how useful you felt this information packet was:

1:

3- Very useful

2- moderately useful

1-not at all useful

2: Please give an example of something that could be improved upon:

Having information on eating post operatively. It was difficult finding information regarding who to contact/what to eat after surgery

3: Please give an example of something you thought was well explained/a way that this packet prepared you:

Well done

4: Please give us an example of something you wish could have been done differently:

NOTES:

Please feel free to make notes, jot down questions and bring to your next appointment....

Improvement:

Anything you feel was not covered and should have been covered? Would you like to give ways that this education piece can be improved for future patients?

Please give us your feedback!