New Surgical Treatment Options for Hernias

By Joseph R. Lopez

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Hernia repair is one of the most commonly performed surgical procedures worldwide. In fact, there are over 600,000 hernia repair surgeries performed each year in the U.S. alone. A hernia is a weakness or defect in the abdominal muscles which can result in the protrusion of tissue through an opening in the outer layers of the abdominal wall. Hernias can develop at any part of the abdominal wall, but generally occur in areas that have a natural tendency to be weak. These areas include the groin (inguinal hernias), umbilicus (umbilical hernias), hiatus (hiatal hernias) and incisions from previous surgeries (incisional or ventral hernias). While hernias generally do not pose serious long−term health problems, they can cause severe pain and discomfort for those suffering from this condition.

Hernias may be present from birth, or can be caused by strain on the abdominal muscles. In either case, hernias do not go away by themselves and depending on the degree of bulging or pain, generally require a surgical procedure to be repaired. Hernia repairs are usually done on an elective basis, which means that the patient and physician decide whether or when the procedure should be performed. Emergency procedures are only done for strangulated hernias, which are hernias that have become pinched to the point that the blood supply is cut off. These hernias require immediate medical attention since they can become infected and lead to a life threatening condition very quickly.

Hernias are typically repaired through a surgical procedure called herniorrhaphy, in which the surgeon repairs the hole in the abdominal wall by sewing surrounding muscle together or by placing a patch called "mesh" over the defect. Most surgeons make an incision at the site of the hernia in order to gain access to the defect, although some surgeons prefer to do these procedures laparoscopically.

During a laparoscopic hernia repair, the surgeon makes very small incisions to pass through specialized instruments and an endoscope, a device that allows the surgeon to see the abdominal area without opening the patient up. Laparoscopic hernia repair generally results in less postoperative pain and recovery time than open surgery. There is still a great deal of controversy over the long−term benefits of laparoscopic hernia repair, however, and it is by no means an option for every patient.

The use of surgical mesh to repair hernias is gaining in popularity with surgeons. Most meshes currently on the market are made from synthetic materials such as polypropylene, polyester, silicone or polytetrafluoroethylene (PTFE), commonly known by the DuPont brand name Teflon®. While these meshes have good strength characteristics, they remain in the body as permanent implants and sometimes can cause adverse reactions when the surrounding tissue identifies these materials as foreign bodies.

In order to avoid adverse reactions to synthetic materials, some surgeons prefer to use meshes made of biomaterials which are gradually resorbed by the body over time and are then eliminated through biological processes. Since these meshes are not permanent implants, they generally only offer temporary repair of abdominal wall defects and additional surgical procedures are sometimes required to replace the absorbed mesh.

An alternative to synthetic and absorbable mesh is human tissue. There are a handful of companies that are now marketing processed, freeze−dried human dermis for soft tissue repair and augmentation. This material is implanted using the same technique as other meshes and provides for revascularization, cellular ingrowth and "remodeling" into the patients tissue. While this option generally provides a permanent repair with few adverse reactions, the processing and distribution of human tissue is not regulated by the Food and Drug Administration (FDA) as are most other products that are implanted in the human body. In fact, there have been a number of recent cases of serious infections and even deaths resulting from the implantation of human cadaveric tissue during surgical procedures.

New technologies have recently been developed to solve the problems associated with the use of synthetic substances, absorbable materials and human tissue in hernia repair procedures. Scientists in Europe have been conducting research and development into alternatives to these products over the past two decades and have made major breakthroughs in this area over the past several years. New ways of collecting and processing natural materials have led to a series of products that offer the strength of synthetic compounds, the biocompatibility of biomaterials and the regenerative properties of human tissue.

What material can offer all of the benefits of the previously mentioned products without the corresponding disadvantages? Porcine dermal collagen has an architectural structure very close to human tissue, and is therefore readily recognized as friendly by the human body. A leading medical technology company in Europe has developed a patented process by which a sheet of porcine dermis is converted into a safe and effective surgical implant for soft tissue repair and augmentation. The process, which takes several weeks to complete, removes all non collageneous material from the sheet except elastin, and stabilizes the material through a cross−linking process. The result is an acellular, non reconstituted, non allergenic membrane which has excellent strength characteristics, is completely biocompatible and provides a permanent solution for the repair of abdominal wall defects. Since the material itself is a byproduct of the meat packaging industry, it is more readily available than human tissue. In addition, the harvesting and processing of the material is strictly regulated by local government, as well as international directives and quality standards.

This collagen surgical implant has been used in Europe for these types of procedures for several years and there is strong clinical evidence of the safety and effectiveness of the product. In fact, the implant

has been approved for sale in the U.S. by the FDA and there have not been any adverse reactions reported after several thousand implantations in Europe. Not only is it safe, since the structure of the collagen is so similar to human tissue, once it is implanted the sheet provides the basis for cellular ingrowth and revascularization. This results in a permanent fix in even the most difficult cases. In addition to the positive clinical outcomes, surgeons like the fact that they do not need to change their surgical technique to use this product. They can use the same exact same steps they would use for synthetic or absorbable surgical mesh in both open and laparoscopic procedures.

Only physicians can properly diagnose and appropriately treat hernias. However, patients have the right to actively participate in decisions that affect their health or quality of life. Information about the various treatment options that are currently available can play an important part in the discussions between patients and their physicians regarding the best surgical treatment option for them.

Joseph R. Lopez is the Executive Director of BioSurgical Innovations, Inc., a privately owned sales, marketing and distribution company that focuses exclusively on new technologies in biomaterial implants, biosurgical devices and complementary products for a number of surgical specialties. These products are designed to interact with living tissue and have the capacity to improve procedural efficiencies for surgeons and enhance the clinical outcomes and quality of life for their patients. BioSurgical Innovations' sells its products through a distribution network that covers Latin America and the Caribbean, as well as key accounts in the U.S.

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Hiatal Hernia − What Is It?

By Nick Willis

A hiatal hernia is an anatomical abnormality in which part of the stomach protrudes through the diaphragm and up into the chest. Although hiatal hernias are present in approximately 15% of the population, they are associated with symptoms in only a minority of those afflicted.

Normally, the esophagus or (food tube) passes down through the chest, crosses the diaphragm, and enters the abdomen through a hole in the diaphragm called the esophageal hiatus. Just below the diaphragm, the esophagus joins the stomach.

In individuals with hiatal hernias, the opening of the esophageal hiatus (hiatal opening) is larger than normal, and a portion of the upper stomach slips up or passes (herniates) through the hiatus and into the chest. Although hiatal hernias are occasionally seen in infants where they probably have been present from birth, most hiatal hernias in adults are believed to have developed over many years.

The Causes of a Hiatal Hernia.

It is thought that hiatal hernias are caused by a larger than normal esophageal hiatus, the opening in the diaphragm through which the esophagus passes from the chest into the abdomen. As a result of the large opening, part of the stomach "slips" into the chest.

Other contributing factors include:

Hiatal hernias are either:

Sliding

Sliding hiatal hernias are those in which the junction of the esophagus and stomach, referred to as the gastro esophageal junction, and part of the stomach protrudes into the chest.

The junction may reside permanently in the chest, but often it juts into the chest only during a swallow. This occurs because with each swallow the muscle of the esophagus contracts causing the esophagus to shorten and to pull the stomach up.

When the swallow is finished, the herniated part of the stomach falls back into the abdomen.

Para−esophageal

Para−esophageal hernias are hernias in which the gastro−esophageal junction stays where it belongs

(attached at the level of the diaphragm), but part of the stomach passes or bulges into the chest beside the esophagus. The para−esophageal hernias themselves remain in the chest at all times and are not affected by swallows.

A para−esophageal hiatal hernia that is large, particularly if it squeezes the adjacent esophagus, may hamper the passage of food into the stomach and cause food to stick in the esophagus after it is swallowed. Ulcers also may form in the herniated stomach due to the disturbance caused by food that is stuck or acid from the stomach.

Fortunately, large para−esophageal hernias are uncommon.

Hope for Hiatal Hernia!

Understanding the processes behind a hiatal hernia and GERD is the first step to treating it. For more information and my recommended resource on the condition, visit my

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