



October Cover Story: Less invasive surgeries are benefiting patients

From trauma surgeries to liposuction, Backus Hospital offers state-of-the-art minimally invasive techniques throughout many disciplines.

Minimally invasive techniques allow doctors to perform procedures through smaller incisions, with specialized instruments, and often with advanced technology.

Patients have quicker recovery times and less post-operative pain because there is less trauma to tissue and muscles.

The decision on whether minimally invasive techniques are appropriate depends on the procedure, the patient and their medical history - but as technology continues to advance, more procedures have minimally invasive options.



Tom Bell, MD, a surgeon at Backus Hospital and Medical Director of the hospital's Critical Care Unit, said minimally invasive surgery options should be part of the discussion between surgeons and their patients.

Endovascular surgery

One of the areas that has had a lot of advances in minimally invasive options is endovascular surgery, which allows surgeons to treat problems in the heart or the blood vessels from within the vessels themselves by using specialized technology and instruments.

The procedures only require a small incision or puncture in the artery or vein. Generally, this means a shorter hospital stay, a speedier recovery, and less risk of complications for the patient.

One such procedure that has had excellent results at Backus is an endovascular aneurysm repair. In the past, with an open surgery, patients usually had to spend

one or two nights in the Critical Care Unit and another five to seven days in the hospital. It would usually take about six weeks before they could return to full activity.

With the minimally invasive procedure, surgeons make the repair through two small incisions in the groin area and use X-ray guidance to insert the stent graft. Dr. Bell said this is a procedure recommended for patients who don't qualify for major surgery. With the smaller incision, the recovery time is quicker and they may only spend one or two nights in the hospital.

"It is a vast improvement, but we are limited by the patient's anatomy and the anatomy of the aneurysm itself. It is not for everyone, but has been very successful for patients who do qualify," he said.

Other types of stenting and ballooning of narrowed blood vessels, including carotid artery stenting, are also available.

Orthopedics

Ammar Anbari, MD, an orthopedic surgeon and arthroscopy specialist on the Backus Medical Staff, said arthroscopic procedures can be used to perform most tendon and ligament repairs in and around joints. With very small incisions and precise instruments, repairs can be made to practically any joint.

"Patients want to bounce back more quickly, and we can get the same, or better results without a large scar and with less postoperative pain," he said. "Patients are able to start rehabilitation faster and get back to their activities sooner."

He said shoulder repairs have seen the most advancements in recent years, because the joint is so large and complex. However, many procedures, short of full replacement, can be done arthroscopically by using an arthroscope that is inserted into the joint through a small incision.

Even with joint replacements, the incisions are smaller than in the past. William Cambridge, MD, Chief of Orthopedic Surgery at Backus, said surgeons have to make sure they are able to insert the joint prosthesis anatomically correctly, or there is a higher risk of failure in the procedure. "We do the surgery as safely as possible, through the smallest incision possible, but the size of the components and the size of the patient has a lot to do with it."

Dr. Cambridge said another area that has seen improvement with minimally invasive techniques is back surgeries for ruptured discs.

Dr. Anbari said orthopedic procedures for trauma patients have also changed. For some fractures there are specialized fixation plates that can be inserted under muscles through fairly small incisions. In addition, in hip fractures, using short metallic rods a hip can be fixed quickly, in about 15-20 minutes, with three very short incisions. He said this allows most patients to walk on their leg right away with minimal pain and less operative bleeding.

Trauma situations

David Coletti, MD, Medical Director of Trauma Services at Backus, said the hospital tries to use minimally invasive options when possible in other trauma situations as well.

"Now we can do fast exams with an ultrasound, such as looking in the belly for an injury or bleeding, without having to open them up or use a needle to check," Dr. Coletti said. "We also can use embolization techniques to slow bleeding in the spleen or the liver."

Interventional radiology can be used to try to preserve the spleen or the liver if it has been injured, to stop the bleeding. Interventional coils can be used to slow the bleeding with pelvic fractures, too.

However, depending on the situation, a trauma can limit what types of minimally invasive procedures can be done, Dr. Coletti said.

Another area where Dr. Coletti said advances have been made is with breast cancer biopsies.

Doctors can now perform ultrasound-guided biopsies, which allow them to make a diagnosis with smaller incisions. Also, sentinel node biopsies are being done more often, where one node where cancer usually spreads to is checked, rather than a larger dissection of more nodes, which can cause pain and swelling in the arm. This is true for different types of cancer staging as well.

Laparoscopic procedures

Laparoscopic procedures have changed how surgeons perform surgery for the gallbladder, colon and appendix. Laparoscopy involves the use of small incisions and small scopes with specially designed tools.

Casey McCullough, DO, a urologist on the Backus Medical Staff, recently returned from a six-month fellowship training in laparoscopic and robotic surgery, which can be used to treat benign and cancerous conditions in the prostate and kidney.

Mark Tousignant, MD, who specializes in general surgery and trauma and is a member of Backus Medical Staff, said gall bladder surgery has changed a lot because of these techniques. This technique also is being used more for colon surgery and spleen surgery.

For example, the spleen can be removed with minimally invasive procedures by separating it from surrounding tissue and then removing from the body in fragments. The length of the operation is about the same, but patients have less pain and a quicker recovery.

"Patients should realize even with minimally invasive techniques there often is still some discomfort, but it should not last as long as with a larger incision and more trauma to the tissues," Dr. Tousignant said.

Thoracic surgery

Juan Escalon, MD, who specializes in thoracic surgery, is a member of Backus Medical Staff. He said a thoracotomy, or chest incision, is one of the most painful incisions.

"We are able to minimize the trauma by not cutting muscles or spreading the ribs, which we used to have to do," he said.

Now surgeons can perform a lobectomy, to remove a portion of the lung through the use of a video camera, without making the larger incision.

Minimally invasive esophageal surgery also can be done using similar techniques. This can help patients with diseases ranging from dysphagia, or trouble swallowing, to esophageal cancer.

Patients have less pain and quicker recovery periods, as well as an earlier discharge from the hospital with these procedures as compared to traditional methods, Dr. Escalon said.

Plastic surgery

One of the more recent trends in minimally invasive surgeries in plastic surgery is laser-assisted lipolysis, which is laser liposuction.

Vinod Pathy, MD, a plastic and reconstructive surgeon on the Backus Medical Staff, said it is similar to traditional liposuction, but it is started with a smaller incision. There is less bruising and faster recovery time. This technique can be used for skin tightening as well as fat sculpting.

"It is not for everyone. We have to select our patients appropriately, but it is an excellent sculpting technique," he said.

Another procedure that has become much more minimally invasive is an endoscopic brow lift. Originally this procedure required an incision from one ear across the top of scalp to the other ear, so it was a large incision. Now three to five small incisions are made in the scalp area, and a camera and dissection techniques are used to lift the brows from underneath.

"We are able to use a smaller tool to secure the tissue and create an arched eyebrow without the huge incision," Dr. Pathy said.

He said it is important for doctors to review all the options with their and select the right procedure for each patient.