The Nissen Fundoplication - Fact vs. Myth

The Nissen fundoplication has been the gold standard anti-reflux surgery since 1974 when Dr. DeMeester and colleagues wrote what would become a seminal paper on the subject - Evaluation of Current Operations for the Prevention of Gastroesophageal Reflux. Since the 1950's there have always been several operations designed to repair hiatal hernias as well as prevent reflux. When there are multiple operations for a single disease this is a sure sign that none are perfect. This remains true today. However, the Nissen remains the most versatile operation the anti-reflux surgeon can employ, a thorough understanding of its physiologic principles, application for patients, and proper surgical technique remains the fundamental foundation upon which the reflux surgeon bases his/her practice. I have written an article for Medscape on the Laparoscopic Nissen Fundoplication and while it is written for medical professionals, it will likely be of use to patients as well- albeit a bit technical. It can be found here. http://emedicine.medscape.com/article/1892517-overview

What makes the Nissen the gold standard?

• the most studied operation with over 20 years of data
• provides the most effective anti-reflux barrier
• when compared head to head to medical therapy the Nissen has proven superior time and time again (http://www.cochrane.org/CD003243/UPPERGI_medical-versus-surgical-management-for-gastro-oesophageal-reflux-disease-gord-in-adults)

So why do I read so many bad things about the Nissen on the Internet?

The answer to this question comes down to one basic principle - Practice Makes Perfect. We know that there is a significant learning curve to master the operative technique (up to 50 cases and surgeons should be supervised during their first 20). Once mastery is attained, maintenance of skill is critical with the best outcomes being seen in high volume centers (>15-30 fundoplications per year). Last year I performed over 130 anti-reflux surgeries in our center. Unfortunately, most of the Nissens performed today continue to be done by low volume surgeons. This has resulted in its bad reputation amongst patients, gastroenterologists and primary care physicians.

Early and late complications or side-effects (such as gas bloat, dysphagia, recurrence) should be low when a high volume surgeon performs the surgery. This should be accompanied by a significant increase in the quality of life for those suffering with GERD.
Ok. So what is a Nissen Fundoplication?

The fundamentals of this operation are: 1. Complete dissection and mobilization of the esophagus within the chest cavity and away from the hiatus (where the esophagus transitions from the chest into the abdomen). 2. Repair of hiatus and hiatal hernia. 3. Complete mobilization of the upper half of the stomach. 4. Formation of a 360 degree fundoplication (the top of the stomach around the esophagus. This final portion has to be done just right so that this a true ‘plication’ instead of a wrap or twist. Incorrect technique here often leads to the many issues seen with swallowing and bloating that patients may complain about. It should look like figure 1 below NOT figure 2.

I have heard that a Nissen fundoplication will only last 10 years and that it will have to be redone.

Not true. What is true is that most operations will last a lifetime for the patient. The published reoperation rates that is xxx. Most patients will be off of ant-acid medications as well. Of course it must be kept in mind that with a Nissen we are using the bodies natural tissue (which are subject to wear and tear) to augment the lower esophageal sphincter. There are several factors that might lead to failure of the fundoplication or hiatal hernia repair: 1. Operative technique 2. Weight gain by the patient. 3. Stress on the tissue from excessive coughing or vomiting to name a few.

What about burping or vomiting?

Patients with a properly constructed fundoplication should be able to burp. Being able to burp is critical to for patients not to have gas bloat syndrome and decrease flatulence after a Nissen. Vomiting is another story. Some patients report that they can vomit but the reality is that is and should be difficult. Vomiting will put undue pressure on the fundoplication and can contribute to long-term failure. My practice
is to make sure that patients have anti-nausea medication that can be taken if patients feel the urge to vomit.

**Won’t I have trouble swallowing?**

This can be somewhat subjective. Many patients will note some difficulty with some foods—breads being one of the classic problem foods. With the Nissen we have recreated a static one-way valve that is designed to prevent reflux. There have to be some compromises in what patients eat in order to eliminate their reflux. What happens with bread is that it absorbs liquid as it goes down the esophagus and then expands right at the wrong time and spot—the fundoplication. So in order to prevent this I encourage patients to eat slowly, chew well, and really think about portion size. For almost all of my patients this will allow them to enjoy the foods that they want to and not have to suffer from reflux disease.

**What happens if I can’t swallow?**

Persistent dysphagia is rare and usually self-limited beyond the healing period. If this does occur the intact fundoplication can be dilated endoscopically. My own dilation rate is less than 10%, but statistically would average 15-20%. This usually gets patients back to eating the foods they enjoy.

**What about other types of fundoplications?**

Before and after Dr. Nissen described his fundoplication there were and are a whole host of operations designed to prevent gastro-esophageal reflux. The most common variants used today are partial fundoplications that are designed to either mitigate some of the more common side-effects of the Nissen, allow for a fundoplication despite poor esophageal function or both. I have listed some of the more common types below with illustrations where available. I utilize many of these fundoplications myself depending on a particular patient’s needs and physiology.

Toupet Fundoplication
These and other types of fundoplications have their proponents and detractors. What has remained constant is that a well performed Nissen fundoplication has stood the test of time. Each of the above does have its place in a minority of patients.

Additional References


