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Bariatric Surgery

Interviewee



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Dr. Matthias Lannoo is an abdominal surgeon at UZ Leuven, Belgium, specialising in bariatric surgery. He is currently researching the effects of bariatric surgery on the glucose metabolism and type 2 diabetes for a PhD. Abdominal surgery appealed to him, he says, for its variety and available specialisms. He started his career researching islet transplantation for type 1 diabetes, before moving to bariatric surgery in 2005, relishing the challenge of laparoscopic surgery and gastric bypass as it was starting up, and researching the effects on glucose metabolism. At UZ Leuven he says he has the best of both worlds: challenging surgery and very interesting research in the field of diabetes. He became President of the Belgian Section for Obesity and Metabolic Surgery in 2014, and his term runs until 2016.

What bariatric surgeries are provided at your institution?

At UZ Leuven we mostly perform gastric bypass, which is the gold standard. Gastric bypasses are 70% of the caseload, with gastric sleeves the remainder. Gastric sleeves can be indicated, for example, in patients who have a transplanted organ and immunosuppression, type 1 diabetes or Crohn's disease. As Leuven is a university hospital we see a wide variety of patients. We have approximately 400 cases a year.

What are the main challenges of bariatric surgery?

Firstly, the lack of follow-up. Surgery is only a little tool that you implant into the patient so that they can stick to the lifelong therapy of eating less and eating healthier than their body and mind is indicating. Even after you have operated, obesity being a chronic disease needs intensive management. In the past, if the surgery went well, wounds were healed, the patient had lost sufficient weight, follow-up was often ceased. So for long term complications like protein malnutrition, vitamin deficiencies, hypoglycaemic episodes... there was no early detection. GPs did not have sufficient training and support to follow them up. Now we see patients who are not doing well, who are regaining weight, at least partially due to lack of sufficient followup. A number of patients experience so-called refractory dumping mainly due to the lack of adequate dietary coaching.

Here in Belgium only the surgery is reimbursed; follow-up by a psychologist or a dietician is not. In this way the problem of insufficient followup increases. Bariatric surgery is not a cure for obesity and its comorbidities but a highly necessary therapeutic module in the multimodal treatment of this disease. Now it starts happening, and in our institution we have worked hard in the last few years to manage all our patients (surgical and non-surgical) in the same multidisciplinary programme. It's working. Results are much better. The most important issue is to make the surgery even more effective in the long term and safer by following up patients, anticipating complications and treating them early before they get all kinds of therapy-related side effects.

The programme at UZ Leuven implemented life-long follow-up for bariatric patients. Despite these efforts we have only data on 30% of the patients at time points longer than 3 years. The rate in the USA is often lower, only 9-10%. So patients need more imperative motivators to become compliant to follow-up and additional therapies. When we want to know the full effect of surgery honestly in the long term we need to put patients in a obligatory programme as for diabetes, where they have to go to a doctor at least 3 times a year, and have these kind of conventions so they get support from a dietician, a psychologist, physical therapist etc. That will be the biggest challenge. The short-term problem is the cost, because there are so many of these patients at this moment. In the long term it will be beneficial as the incidence of expensive obesity-related comorbidities will decrease.

Second is the challenge of getting the surgery in the right place in the clinical management of obese patients. Timing of surgery will become very important in the future. Now, timing of the surgery is when the patient thinks of it, when they are sick of being obese and experiencing the multiple treatment failures, and want the surgery. Surgery is probably most effective, for example, just before or when diabetes starts. However, we have to investigate this to make surgery more effective with good timing and with good follow-up of the patients.

Third is the challenge of new techniques. Surgeons like to invent operations that carry their name! You have the gastric sleeve and approximately 15 other operations that you can see in the literature. Surgeons are trying to do something different, based on some possible insight into the effects of the surgery. To prove safety and effectiveness of a new procedure it requires thousands of patients and 15 years of follow-up. For the moment I think we should optimise our time and resources by sticking to four standard procedures and learning how they work and what their effects are.

Fourthly, on the research side the problem is that we do not know what is causing the overconsumption and underuse of calories, resulting in obesity. Obesity was only classed as a disease two years ago. As most of the disease is mainly genetically determined with a cocktail of immune and environmental mediated disturbances started with some trigger such as smoking cessation, pharmacological agents, depression... In obesity we do not know fully which metabolic processes are affected and how they interact in a healthy subject. In surgery we were extremely lucky – we did not know the disease, we performed procedures and are now curing 80% of patients. We are also trying to get insights into knowing the comorbidities of the disease – obesity, type 2 diabetes, non-alcoholic steatohepatitis (NASH) and all the things that are correlated. We need to know how surgery is influencing these effects. Increasing our knowledge on this disease or possibly many different diseases with obesity as the common symptom, will be the most important issue. In the case that there are several mechanisms of disease and their combinations, surgery can only be tailored when knowledge of both disease and therapy is more complete. In addition we will learn why 20 per cent of patients escape from the therapeutic effect of surgery in the long term or others experience invalidating side effects e.g. hypoglycaemia. The ultimate goal of research is to make the therapy less invasive and safer.

Bariatric surgery sometimes gets a bad name. Some of the public but also medical professionals think that the problem is not a disease, but laziness of obese patients, and categorise bariatric surgery in the group of aesthetic procedures. That obesity was not classed as a disease until recently indicates the dimension of this wrong way of thinking. It's not an aesthetic operation; it's purely a medical therapy. The problem is that a lot of people deserve this therapy, but are considered as aesthetic cases rather than medical when potential reimbursement is evaluated.

What have been the major advances in bariatric surgery?

The introduction of laparoscopy. With open surgery you have to make an incision just below the sternal notch, and obese patients had the most problems with breathing, wound infections and eventually large incisional hernias. Now you can do the operation minimally invasive with less postoperative pain and fast mobilisation resulting in fewer possibly lethal complications. Patients can be home after two days. Stapling devices have also evolved. Anaesthesia has improved a lot with a lower use of opioids, the use of agents that are not absorbed by the large fat mass and less opioid use in postoperative pain regimens. All enhance postoperative recovery and early mobilisation. These have made bariatric surgery safer in the short term.

What are the pros and cons of invasive as against minimally invasive bariatric surgery?

Minimally invasive is the gold standard in bariatric surgery. Even if there are complications after an operation, such as sepsis or shock due to an early fistula these patients are re-operated laparoscopically. It is more difficult, but recovery is so much faster and there are fewer complications. In the case of upper abdomen surgery in morbidly obese patients exposure is also so much easier with laparoscopic surgery, making surgery more accurate and safer.

How important is multidisciplinary management of obesity?

Multidisciplinary management is mandatory for the long term. Although the effect of surgery is tremendous, when you take the other disciplines away, surgery only is 50% effective. Once patients lose weight, more weight than they have ever lost, it seems easy when it stays off when they start eating. The patients think they do not need follow-up, only surgery. However, in the long term if you do not follow them up, and give them support from dieticians and psychologists you see a lot of side effects that can be avoided. If a patient has gained a lot of weight you cannot re-operate, and it is as difficult as before to get the weight off. We need to see them early to prevent weight regain.

What are the side effects and complications of bariatric surgery?

The side effects include vitamin deficiency, dysphagia, small bowel obstruction and inadequate dumping syndrome. Vitamin and mineral deficiencies are frequent (up to 40% of the patients). Even in the case of preventive administration of a multivitamin, control of the blood levels is imperative at least once a year. The most common deficiencies are iron, vitamin B12, vitamin D and folic acid.

Normally, patients with a Roux-en-Y gastric bypass (RYGB) or a sleeve gastrectomy (SG) do not vomit. If this is the case a stenosis of the gastroenterostomy, mostly due to a marginal ulcer or a small bowel obstruction is present. Small bowel obstruction is always a surgical urgency, due to a high incidence of subsequent ischaemia of the complete small bowel either to an acute dilatation of the native stomach with a high chance of cardiac arrest. The most frequent cause is an internal herniation of small bowel into the mesodefect at the enteroenterostomy or between the mesenterium of the alimentary limb and the transverse colon. A CT scan is negative in almost half the cases of small bowel obstruction. So a high index of suspicion and a very low threshold for urgent exploratory laparoscopy is advised.

Dumping may occur after surgery to the stomach more particularly after ingestion of mainly simple carbohydrates. To a lesser extent it may also occur after fatty food and low calorie food with a beverage, or with a beverage less than half an hour apart from the meal. Early dumping occurs immediately after a meal, and symptoms are dizziness, nausea, diarrhoea, abdominal cramping pain and angina-like pain. Late dumping occurs two hours after a meal causing hypoglycaemia with neuroglycopenia symptoms. These symptoms are induced by osmotic large-fluid shift to the small intestine with consequent vasomotor reactions and by an excessive incretin response with disproportional insulin secretion, respectively. Dumping can be avoided if the patient adheres to a sugar-free and fat-free diet. Moreover, a very regular eating pattern and avoidance of alcohol are mandatory to avoid hypoglycaemic events. If patients do not adhere to this advice the hypoglycaemic episodes will induce more craving for sugar. It is a vicious circle, resulting in alternating hyperand hypoglycaemic episodes with subsequent tiredness and headaches. This can be identified quickly in followup. If not, patients will come back eventually with weight regain.

Another complication is marginal ulcers at the gastroenterostomy. If patients are smoking, drinking diet coke or taking non-steroidal anti-inflammatory drugs they are prone to get an ulcer. Most common complications of a marginal ulcer are stenosis, bleeding or perforation. Therefore patients are on proton pump inhibitors (PPI) the first 1 to 3 months after surgery and around 50% stay on PPIs lifelong. Reflux disease can be a long-term complication in patients with a sleeve gastrectomy. PPI use is even higher in these patients

What role does imaging play in planning and follow-up of surgery?

It is very important. Patients complaining of dysphagia, weight regain or symptoms of small bowel obstruction will always be investigated with a barium swallow upper GI series and/ or a CT scan of the abdomen. The volume of the pouch, the diameter of the gastroenterostomy, the presence of a gastrogastic fistula, whirl sign of the superior mesenteric artery, dilation of small bowel is appreciated. A lot of patients already have a gastric band, and in case of a planned secondary gastric bypass or just in case of troubles, they also get an a barium swallow upper GI series to see where the band is located, or if there is slippage. Nowadays most of the band fillings are also performed under radiology with a barium swallow to check the stoma diameter.

Is bariatric surgery a long-term cure?

Only if there is multidisciplinary management of the patient. Bariatric surgery is an essential tool to enable morbidly obese patients to adhere to the lifelong therapy of eating less, eating healthily and doing exercise. Our surgery is mandatory to make the obesity treatment successful, otherwise patients will lose the courage to stick to the therapies. When you have to do surgery, and what surgery to do in what patients will be the question for coming years.

At this moment, the right indications for surgery for patients with a BMI below 35 are unknown. Once it will be possible to identify the patients in this population that surely will develop a higher BMI and comorbidities later in life, surgery will possibly be indicated as an early intervention. Maybe surgery earlier on be even more effective in the long term. For now surgery in obese patients is only indicated in randomised clinical trials. First of all there is still a lot of work to make surgery, the only long term cure for morbid obesity, more accessible for all patients like in Belgium, Scandinavia and the Netherlands.

tourists. Are national/ international guidelines strict enough? Would you like to comment on this issue.

You can make a thousand guidelines, but if patients come to a surgeon and are unhappy with their weight, there will always be surgeons who will do it irrespective of the guidelines. In these cases the surgeon lays responsibility with the patients by means of a tight informed consent analogous with aesthetic surgery. However, postoperative complications for aesthetic surgeries are not so bad as for bariatric surgery. Performing procedures in an abdomen is one bridge too far to do so only for aesthetic reasons. This is my personal opinion. Although legally it could be airtight when there is a clear contract between a surgeon and a patient. Anyway, a thousand guidelines cannot change this, and happily it is still an exception.

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