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BARIATRIC/METABOLIC SURGERY II.

61. Jejunoileal anastomosis – novel procedure in bariatric/metabolic surgery – technical aspect

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Background and aims: In the history of bariatric/metabolic surgery are known more than 60 procedures. Recently there is tendency to diminish the minimal invasivity of laparoscopic surgery. Therefore endoscopic procedures are emerging. Long term results of these are not as good as effects of surgical procedures, so far. One of new procedures is endoscopic jejunoileal anastomosis by magnetic rings. To compare results of endoscopic approach we initiated study with jejunoileal anastomosis done by means of laparoscopy. The aim is to reffer technical details of the procedure. **Material and methods:** From September 2016 to April 2017 together 8 laparoscopic jejunoileal anastomosis was performed. There were 5 women in the group, age ranged from 30 to 58 years (48.5), BMI from 35.26 to 47.6 kg/m^2 (42.5). Two patients were type 2 diabetics. General anesthesia was used, patient in supine position. For trocars were inserted, one of them 12 mm for the use of the linear stapler. The side to side anastomosis was created by means of the stapler 4 cm long, 40 cm from Treitz ligament and 40 cm from ileocoecal junction. Mesenteric defect was left open, no additional stitches to secure the intestinal anastomosis were placed. **Results:** Operating time ranged from 27 to 61 minutes (skin to skin time), no intraoperative complication was recorded. In the follow up two redo procedures were needed for internal hernia and intestinal obstruction 14 days and 4 months respectively. In six patients who completed three months follow up weight loss from 5 to 17 kg (11.3) was observed. Average BMI dropped to 39.35 kg/m^2. In one diabetic patient improvement of glucose metabolism was observed. **Conclusion:** Long term effect of standard bariatric/metabolic surgery is good documented. Research in the metabolic field leads to invention of new metabolic procedures. Low invasivity connected with long term effect is the major aim of this effort. Longer follow up in bigger cohort is necessary to assume the effect of this new procedure. It is not very demandig, minimally invasive and cost effective.

62. Effect of endoscopic gastroplasty and surgical plication of the stomach on bodycomposition: short term, 6 months study

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Introduction: Endoscopic methods in bariatrics have been an alternative in recent years to morbidly obese patients who can not perform surgery or fear it. The aim of the study was to evaluate the weight loss and changes in the body composition of patients undergoing endoscopic gastroplasty, and then compare them with the results of patients who had surgical laparoscopic gastric plication. **Methods:** The study included 40 morbidly obese patients (8 males and 32 females, ØBMI 37.98 ± 2.65 kg/m^2, Ø age 40.90 ± 8.25). Two bariatric performances were evaluated, namely endoscopic gastroplasty (4 males and 16 females, Ø initial weight 103.81 ± 102.10 kg) and laparoscopic plication (4 males and 16 females, Ø initial weight 110.95 ± 10.68 kg). Patients underwent anthropometry and densitometry (DXA technology) at pre-treatment screening, then 3 and 6 months after surgery. **Results:** Patients' results were compared before and after 6 months after bariatric surgery. All patients experienced a statistically significant decrease in body weight after 6 months. In patients with endoscopic gastroplasty, %EWL 24 %, total mass (kg) 7.55 ± 3.08 ($p < 0.0001$), fat mass (kg) 5.50 ± 2.11 ($p < 0.0001$), lean + BMC (kg) 2.05 ± 1.31 (0.0003), waist (cm) 7.60 ± 2.61 ($p < 0.0001$), hips (cm) 5.25 2.13 ($p < 0001$). In patients after laparoscopic gastric plication total mass (kg) 19.53 ± 3.54 ($p < 0.0001$), fat mass (kg) 13.43 ± 2.54 ($p < 0.0001$), lean + BMC (kg) 5.94 ± 1.43 ($p < 0.0001$), waist (cm) 14.05 ± 3.41 ($p < 0.0001$), hips 14.30 ± 3.19 ($p < 0.0001$). Comparison of the results for both bariatric methods revealed a higher decrease in %EWL 50 %, total mass (kg) 11.83 ± 4.54 ($p < 0.0001$), fat mass (kg) 7.94 ± 3.19 ($p < 0.0001$) lean

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mass + BMC (kg) 3.89 ± 1.87 (p < 0.0001), waist (cm) 6.45 ± 4.15 (0.001632), hips 9.05 ± 3.71 (p < 0.0001), after surgical gastric plication. **Conclusion:** Both methods have statistically significant desirable decreases in body weight, fat mass, waist and hip circumference. Higher loss of active body mass was measured in patients after surgical plication, who also had a higher total body weight loss. Although higher rates of body weight, body fat, waist and hips have been measured after surgery, the endoscopic gastroplasty method can be considered as a possible alternative for patients who are not suspected or suspected of having surgery. Patients after endoscopic gastroplasty will be measured 12 months after the procedure, then compare the results again with a group of patients after surgical procedure.

63. Guillain-Barré-syndrome following laparoscopic sleeve resection

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Background: Bariatric surgery until now is performed with rare complications. Nevertheless the corresponding patient population usually represents a high risk collective. Thus consistent management of complications is of enormous importance. We demonstrate the case of a 39 year old female, developing a Guillain-Barre-Syndrome (GBS) following smooth laparoscopic sleeve resection (LSR). **Case history:** In August 2015 the patient had a BMI of 60.2 kg/m^2 with characteristic obesity associated comorbidities. First she underwent full-scale nutrition advice, accompanied by fitness and rehab training two to three times a week. On June 7, 2016 LSR was performed. Initial course was without any complications. On the fourth postoperative day (popd) she developed an ascending weakness in both legs. Our neurologist first assumed a critical illness polyneuropathy, despite of unremarkable course until then. Myelon MRT scan, cranial, thoracic and abdominal CT scans were normal. Spinal fluid puncture (SFP) failed, due to excess of subcutaneous adipose tissue. Until the 6th popd symptoms were increasing, the patient even was incapable of sitting. Electromyography (EMG) showed prolonged distal motoric latency, a leak of persistence of the F-wave and prolonged F-wave latency, thus leading to the suspicion of a GBS. Immediately immuno adsorption (IA) was performed. On the 14th popd, following 10 courses IA of the patient was moved to neurological rehabilitation, at this time mobile on the wheeled walker. Until now, the patient recovered completely, her actual BMI is 36 kg/m^2. **Conclusion:** Apart from following infections of the airways or the gastrointestinal tract, GBS also has been observed to occur after surgical procedures. A symmetric muscle weakness, usually first representing in the lower limbs, continuously ascending is characteristic for the GBS. Feared complications are affliction of the autonomic nervous system with orthostatic disorder and heart rhythm disturbances, as well as affliction of the diaphragmatic muscles with respiratory insufficiency, in obese patients not infrequently leading to life threatening long lasting mechanical ventilation. Typical findings of SFP in patients suffering from GBS are increased protein values in the spinal fluid, while cell counts are in normal range. As a SFP often fails due to excess of subcutaneous adipose tissue, it is of enormous importance to gather alternative diagnostic tools, in order to come to fast solution of diagnosis. In the present case the typical clinical findings the results of EMG were path breaking, prompt IA was the tool of choice for treatment of the patient. Retrospectively we should have indicated EMG when the first symptoms of muscle weakness occurred.

64. Correlations between the distribution of ghrelin producing cells and anthropometric parameters in obese patients who underwent laparoscopic sleeve gastrectomy

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Background and aim: Metabolic surgery is currently the most efficient treatment for obesity. Laparoscopic sleeve gastrectomy (LSG) is one of the most used procedures, due to the sustainable long time effects on weight loss, metabolic parameters, and fewer side effects compared to gastric by-pass. The complex post-operative changes in obese patients provide also a multitude of opportunities to research into the aetiology of obesity. Ghrelin is a major contributor in appetite regulation and it is secreted mostly by the gastric fundus mucosa, hence being altered after LSG. We aimed to characterise the ghrelin producing cells in patients who underwent LSG and describe

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correlations with anthropometric parameters. **Methods:** We performed a nested study inside our larger study on obese patients surgically treated in our centre, using immunohistochemical methods to analyse the ghrelin producing cells in the resected stomach pieces after LSG. We analysed the distribution of ghrelin producing cells in three different areas from the resected stomach pieces – fundus, corpus and antrum. Tissue sections of 4 μm were treated with monoclonal IgG anti-ghrelin antibodies. For all patients, we recorded anthropometric parameters before surgery. The study had the approval of the ethical committee of our university. **Results:** We analyzed 21 surgical samples. The total number of ghrelin producing cells was 15.06 ± 5.97, with the highest number of cells being in gastric corpus (16.6 ± 7.2), followed by the fundus (14.85 ± 7.02) and antrum region (13.75 ± 8.12), the differences being statistically significant ($p < 0.001$). Women had more ghrelin producing cells than men, but without statistical significance. The number of ghrelin producing cells at the site of gastric corpus negatively correlated with weight ($R^2 = 0.305$, $p = 0.011$), body mass index ($R^2 = 0.211$, $p = 0.017$) and waist circumference ($R^2 = 0.2$, $p = 0.066$). **Conclusions:** Our study shows correlations between the number of ghrelin producing cells in the stomach and anthropometric parameters. We need to pursue this line of research in order to determine whether this correlates also with the plasma level of ghrelin and other metabolic parameters.

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