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METABOLIC SURGERY: BASELINE PATIENT PROFILE AND 3-YEAR OUTCOME DATA

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Introduction. We performed baseline patient profiling and documented biochemical, morbidity and mortality outcomes after bariatric surgery in our centre.

Methods. Fifty baseline variables were expressed as percentage of total patient population (data not shown), including dietary and social history, and major and minor comorbidities. Biochemical, clinical outcome, disease resolution, morbidity and mortality were documented.

Results. Baseline parameters (3 months - 3 years; *p*-values not shown): number of subjects *n*=730 - *n*=193; weight 127.0 - 93.1 kg; BMI: 44.6 - 32.0 kg/m²; waist 123 - 97 cm; hips: 133 - 113 cm; neck: 3.5 - 37 cm; BP(S) 147 - 132 mmHg; BP(D) 89 - 80 mmHg; comorbid diseases 6 - 0.6; F-glucose 6.8 - 4.9 mmol/l; F-TG 1.8 - 1.0 mmol/l; F-HDL 1.0 - 1.6 mmol/l; F-LDL 3.3 - 2.0 mmol/l; ALT 31 - 22 U/l; AST 25 - 21 U/l; GGT 38 - 21 U/l; U/A 0.44 - 0.28 mmol/l; and CRP 16 - 5 mg/l. Mortality: surgical - 0%, medical - 0.1%. Morbidity: major surgical - 2.9%, minor surgical - 6.1%; major medical - 3.1%, minor medical - 1.9%.

Patients presented with a long-standing history of attempts at weight loss (>17 years). There was a strong history of childhood and family obesity. The presence of true eating disorders was low. Male patients had a higher BMI and a more adverse clinical profile at baseline. Biochemical profiling was more adverse and anaesthetic risk was higher in male patients; technically more difficult surgery (android fat deposition). Infertility and PCOS were present in 21% of women. Comorbid diseases decreased from a mean of 6 to 0.5 at 2 years post-surgery. Disease resolution was high at 3 years with approximately 88% of patients having diabetes resolution; hypertension resolution was lower in male patients. Food tolerance and follow-up at our centre was good at 3 years. The true incidence of gallstones was approximately 7.5%, and stomal ulceration was present in 7% of patients.

Surgical and medical morbidity is low in very high-volume centres; in our centre these were on a par with the best reported data internationally. Surgical and medical morbidity in our centre were approximately 0%.

Conclusion. Metabolic surgery is a modern-day solution for obesity, with high disease resolution and very low mortality in exceptional centres of excellence.

EXPERIENCE WITH SINGLE INCISION PAEDIATRIC ENDOSURGICAL NISSEN FUNDOPPLICATION

M Van Niekerk

Introduction. Single incision paediatric endosurgery is rapidly gaining popularity. It offers excellent cosmetic results, and may be associated with decreased post-operative pain. The most common reported procedures in children to date are cholecystectomy, appendectomy and pyloromyotomy. We have employed this technique for Nissen fundoplication.

Methods. Between May 2011 and April 2012, 8 single incision funduplications were performed. Three disposable trocars were used through separate fascial incisions at the umbilicus. A long 45 cm 30° laparoscope (Storz), standard straight instruments and roticulating instruments (Covidien) were used. Minimal oesophageal mobilisation was done. In the first 6 patients, an extra corporeal suture technique was used to create the wrap. In the last 2 patients, an intracorporeal technique was used.

Results. There were no intra-operative adverse events or major complications post-operatively. Mean operative time was 95 minutes. All patients started oral feeds within 12 hours after operation, and were discharged on the second post-operative day. Follow-up ranged from 1 month to 11 months, and reflux subsided in all patients.

Conclusion. Nissen fundoplication can be done safely and successfully using a single umbilical incision approach. Operation time is longer and the technique is more difficult but, with advances in instrumentation and equipment, single sight surgery will become easier. Prospective studies are necessary to evaluate whether improved outcomes can be substantiated. Guidelines have to be implemented for training to improve safety of patients. (Note: a 2-minute video is included in the presentation.)

TRANSABDOMINAL PRE-PERITONEAL (TAPP) INGUINAL HERNIA REPAIR: EXPERIENCE WITH 75 PATIENTS

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Objective. To study the results of transabdominal pre-peritoneal (TAPP) laparoscopic inguinal hernia repair.

Methods. Between 2009 and early 2012, a total of 75 patients underwent TAPP laparoscopic repair of their inguinal hernias in a single surgical practice in Johannesburg. Their results were studied retrospectively. Inclusion criterion was all patients who agreed to the laparoscopic repair. Exclusion criteria were multiple previous laparotomies and any contra-indication to general anaesthesia.

Results. Seventy-five patients were included, of whom 5 were female. The mean age was 54.7 ± 13.3 years. Fifty-six hernias were unilateral, and 19 were bilateral. Nine were recurrent hernias. Follow-up was 1 day, 7 days and 3 months after the repair (26 patients came for the 3-month follow-up). Mean operative time was 67.4 ± 39.9 min. for bilateral, and 46.9 ± 14.8 min. for unilateral hernias. There was no visceral injury or intra-peritoneal bleeding. Seven patients had groin pain, 10 had shoulder pain, 2 had chronic pain, 2 had groin swelling, and 1 complained of scrotal pain. There was no numbness, no port hernia, no orchitis and no mesh infection. Three patients had urinary retention after the operation. There was a port abscess and 2 recurrences. Return to normal activity and driving was encouraged the day after discharge.

Conclusions. TAPP hernia repair is technically easy, fast and safe; it is associated with little pain, low recurrence rates, good cosmesis, patient satisfaction and fast recovery with early return to normal activity.

METABOLIC SURGERY: SURGICAL PROFILE AND COMPLICATIONS OF 737 CASES AT WATERFALL CITY HOSPITAL

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Objective. Surgical profiling, morbidity and mortality data of metabolic surgery should be presented within the South African context in a comprehensive manner.

Methods. Prospective data were collected between 2007 and 2012 on 737 consecutive cases by a single principal surgeon and entered on a custom-designed database. Information was also collected on the true incidence of gallstones and *H. pylori*. Data are reported on GBP, SG, BPD-DS and revision surgery.

Results. Of the total cohort, LGBP was 80.6%; BPD-DS 8.5%; OGBP 4.2%; LGS 2.0% and revision surgery 6.3%. The true

incidence of gallstones was 5.6%; stomal ulceration 15% and pre-operative *H. pylori* 27.5%. During 2007 - 2009, major complications were 5.4%; 2010 - 2012 major complications 1.5%, this in the presence of a 7-index increase in BMI and a tripling in the rate of BPD-DS performed. Comorbid disease profile increased from 4 to 7 major diseases compared with 2007. Overall operative time decreased significantly despite a larger number of BPD-DS. Minor complication rate was 6.1% overall. Surgical mortality was 0.

Conclusion. A more difficult patient profile is a natural evolution of an experienced centre. Higher morbidity can be counteracted by a more stringent medical and psychological selection process, intensifying the level of pre- and post-operative medical care, careful and correct selection of surgical procedure, and decreasing the operative time.

RADIATION PROTECTION OF PATIENTS AND STAFF DURING FLUOROSCOPY

Belinda van der Merwe

Objectives. Owing to the cumulative effect of radiation, gastroenterologists, who are chronically exposed to low doses of radiation, are vulnerable to the stochastic effects of radiation. This study revisits international ionising radiation limits, codes of practice in South Africa, and measuring the radiation dose received by surgeons during fluoroscopy. The threshold dose for the eyes was lowered to 20 millisievert (mSv) in November 2011. Current protocols needs refining to adhere to the 'as low as reasonably achievable' (ALARA) principle.

Methods. Thermoluminescent detector (TLD) measurement of accumulated dose to specific anatomical regions of a gastroenterologist performing fluoroscopy of patients undergoing treatment for endoscopic retrograde cholangiopancreatography (ERCP) procedures. Two TLDs were placed on the left knee closest to the X-ray tube under the table (not covered by the lead apron), 2 on the left elbow closest to the image intensifier (II), 2 on the shoulder closest to the II, and 1 on the thyroid, underneath the thyroid shield.

Results. The average equivalent dose to the surgeon expressed in mSv per patient were: 0.03 mSv at the shoulder, 0.3 mSv at the elbow, 0.02 mSv under the thyroid shield and 0.4 mSv at knee level.

Conclusion. The ideal is to position the image intensifier (II) above the theatre table. The longest possible distance from the source will lower radiation risk. Full body protection of 0.35 mm lead equivalence during fluoroscopy is mandatory. Radiation must be monitored monthly with a personal radiation monitoring device (PRMD). If only a lead rubber apron is worn, the PRMD must be secured outside the apron, preferably at the collar.