

SORTED (Surgery for Obesity – Registrar Training and Educational Development) Bariatric Course

Description

SORTED (Surgery for Obesity – Registrar Training and Educational Development) is a unique modular course, designed specifically for senior trainees within two years of a consultant post. Its aim is to provide operative training in addition to enhancing multidisciplinary skills necessary to practice in this specialty. Full sponsorship was generously offered by Ethicon Endo-Surgery after a “dragon’s den” style pitch at head office and the pilot course was setup in the South West region. This course description is intended to share SORTED first experience as an idea of integrating simulation-based training in a bariatric registrar training curriculum. Delegates are selected by strict entry criteria from open competition using a combination of CVs, letters of support from trainers and personal statements.

The aims of the course are to provide an overview of bariatric surgery, introducing techniques with hands on / live operation. Approach to patients is discussed during the course, as it is a unique component of treatment of bariatric patients. This course is not intended to produce proficient bariatric surgeons. This course describes in detail the LAP Mentor™ simulation component of the course, however it is recommended to integrate the simulation training in a modular program including dry lab, wet lab environments and symposia, similar to the program described.

Objectives

- ◆ Provide an overview of bariatric surgery
- ◆ Introduce techniques with hands on / live operating
- ◆ Approach to patients

Specialties

- ◆ General surgery
- ◆ Bariatric surgery

Target Audience

Designed specifically for senior trainees within two years of a consultant post. Delegates are selected using a combination of CVs, letters of support from trainers and personal statements.

Assumptions

SORTED is a unique modular course, designed specifically for senior trainees within two years of a consultant post. Its aim is to provide operative training in addition to enhancing multidisciplinary skills necessary to practice in this specialty.

Suggested Time Length

During a two day course, the simulation session is of limited time, therefore it is recommended to select one or two basic skills cases and continue to the procedural training. When time permits, further skills training are recommended.

Authors

This course was written in collaboration with:
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Ethicon EndoSurgery sponsored and supported.



AccessSurgery References:

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SORTED Pilot Course Experience – Introduction for Instructors

“As a surgical registrar with a specialist interest in Upper GI and Bariatric surgery, I was frustrated by the lack of a formalized training programme in Bariatrics in the UK. I was also a little disappointed that courses in bariatric surgery were slightly confused about their target audience, with delegates ranging from junior trainees to senior consultants. I decided to address these problems and designed SORTED. The delegate feedback was uniformly excellent and I am hugely grateful to the entire faculty and in particular Paula Thomas, Mark Thomas and Paul Griebel from Ethicon Endo-Surgery who facilitated this pilot course from conception to delivery. The plan for the future is to nationalize SORTED.” (Simon Monkhouse, Specialist Registrar. Royal United Hospital, Bath, United Kingdom.)

Curriculum Overview

The SORTED curriculum is based on The Intercollegiate Surgical Curriculum Programme (<https://www.iscp.ac.uk/>)

Knowledge:

- ◆ Indications for surgery in morbid obesity
- ◆ Therapeutic options for morbid obesity
- ◆ Types of operations performed
- ◆ General principles in the management of the obese patient perioperatively
- ◆ Long term management of the bariatric patient post surgery

Clinical Skills:

- ◆ History and examination of the obese patient
- ◆ Assessment of the post operative bariatric patient
- ◆ Interpretation of investigations in the obese patient
- ◆ Management decisions for early and late complications of morbid obesity

Technical Skills and Procedures:

- ◆ Laparoscopic access in the morbidly obese
- ◆ Aspiration of lap band port
- ◆ Emergency release of lap band for slippage
- ◆ Insertion of lap band
- ◆ Repair of internal hernia after gastric bypass
- ◆ Roux en Y gastric bypass
- ◆ Revisional gastric surgery for obesity
- ◆ General Surgery for the super morbidly obese patient

Pilot to Established Programme...

- ◆ Review of feedback / debrief
- ◆ Ethicon Endo-Surgery backing and funding
- ◆ ALS support

SORTED 2011

- ◆ 3 national centers
- ◆ South-West
 - David Mahon / Richard Welbourn
 - Revisional surgery
- ◆ North
 - Sean Woodcock
 - Band fill course
- ◆ South-East
 - Marco Adamo
 - Single incision surgery

The Future...

- ◆ All trainees to go through SORTED
- ◆ Progression (cadaveric courses, fellowships, consultant practice)
- ◆ Rigorous assessment / curriculum
- ◆ BOMSS endorsement

SORTED Pilot Course Overview

The course program was as follows:

1. Module 1 (Feb18th/19th 2010)

Faculty:

Mr. David Hewin, Mr. David Mahon, Mr. Peter Sedman

Description:

This two day module was held at the state-of-the-art facility in Germany, owned and run by Ethicon Endo-Surgery. The programme included:



Module 1 – Simulator Session

Using computer simulation to revise basic laparoscopic skills such as knot tying and suturing. Hand-eye coordination and manipulation exercises were included with time trials to encourage competition between the delegates and faculty. The faculty was not always the fastest. Each delegate and faculty had their own individual simulator.

Overview:

- ◆ Introduction to the Simbionix simulators, one delegate per station
- ◆ Individual programmes
- ◆ Basic skills
- ◆ Suturing
- ◆ Gastric Bypass
- ◆ Time trials -faculty vs. delegates

The simulator session is described in detail in the next section.



Module 1 – Dry Laboratory Session

Each delegate had their own laparoscopic station with a porcine prosection. This was excellent as all the organs were in their correct anatomical positions and was a welcome change to a dried out stomach and bowel pinned out on a corkboard. We then trialed a new perfusion prosection model (unique to Ethicon Endo-Surgery) in which red liquid was continuously pumped through a cannula in the splenic artery. This meant that the tissues were engorged and “bled” if you made a mistake. A truly excellent experience for all and great preparation for the wet labs.

Overview:

- ◆ Introduction to the stations, one delegate per station
- ◆ Porcine prosection
- ◆ Anatomical accuracy
- ◆ Pulsed perfusion models
- ◆ Latest technology



Symbionix Sigmoidectomy Module Provides a simulated Echelon Flex for additional practice.

Module 1 – Wet Labs

Uniquely we had a full day in the wet labs with two delegates per station. The delegates had the opportunity to perform gastric banding with the Swedish Adjustable Gastric Band (Ethicon Endo-Surgery), followed by band removal, followed by a sleeve gastrectomy and finishing with a Roux-en-Y gastric bypass. We were able to use the state-of-the-art staplers, such as the Echelon Flex and equipment which enhanced the whole experience.

Overview:

- ◆ Two delegates per station
- ◆ Full day
- ◆ Procedures:
 - Gastric Band
 - Band removal
 - Sleeve
 - Bypass (Gastro-colic compromise)

2. Module 2 (Mar 23rd 2010) Southmead Hospital, Bristol, UK

Faculty:

Ms. Sally Norton, Mr. Justin Morgan, Ms. Sharon Bates, Dr. Mike Darby.

Description:

This one day module allowed the delegates to get up close and personal with gastric banding. The afternoon involved meeting a real patient in a question and answer session, facilitated by the superbly enthusiastic and knowledgeable nurse specialist. This was hugely valuable as it allowed the delegates to ask those questions that can't be found in textbooks. This was followed by a radiology tutorial to allow recognition of slips and pouch dilatations. The delegates found this to be very useful. The last part of the day was attendance at a "live" MDT meeting. Delegates could see the process of patient selection and get input from dieticians, psychologists and endocrinologists. Definitely, an eye opener and gave a unique insight into the bariatric surgery pathway which is usually a "behind closed doors" affair.

Module 2 – Banding Day

Delegates were cleared by occupational health in advance and scrubbed up in pairs to undertake a supervised gastric band.

Overview:

- ◆ Health Clearance
- ◆ Live operating
 - (2:1 hands on)
 - Video link / facilitator

Module 2 – Patient Q&A Session

Meeting a real patient in a question and answer session, facilitated by a nurse specialist.

Overview:

- ◆ Safe environment, difficult questions
- ◆ Radiology tutorial
- ◆ Difficult fills
- ◆ Slips / Pouch dilatations / Erosions

Module 2 – MDT meeting

Enable delegates to see the process of patient selection and get input from dieticians, psychologists and endocrinologists.

Overview:

- ◆ Real time – "fly on the wall"

3. Module 3 (Apr 12th 2010) Musgrove Park Hospital, Taunton

Faculty:

Mr. Richard Welbourn and Mr. David Mahon

Description:

This one day module was the third and final chapter of SORTED. It was a day of live operating via video links. We witnessed two gastric bypasses, a band and VBG (Vertical Banded Gastroplasty) conversion to a bypass. The operations were fantastic with two way interaction between surgeon and delegates via microphone.

Instructions:

Utilize natural “gaps” between cases by scheduling guest and delegate presentations.

Module 3 – Live RNYGB Operating

Overview:

- ◆ Real time anesthetic
- ◆ Theater set-up
- ◆ Interactive
- ◆ Revisional Surgery
 - VBG to bypass

Module 3 – Delegate Presentations

The delegates were given presentation topics to prepare for this meeting and each delegate delivered a well researched, ten minute presentation on a topic of controversy in bariatric surgery. Examples included “Which operation for which patients”, “When to remove a band” and “Nutritional consequences of the gastric bypass”. This was particularly useful as the delegates drew out information from the most up to date literature and gave an evidence –based overview of their topic.

Overview:

- ◆ Delegate presentations
 - Topics distributed in Hamburg
 - Covered curriculum
 - 10 minutes
- ◆ Commissioning presentation
- ◆ National Bariatric Surgery Database

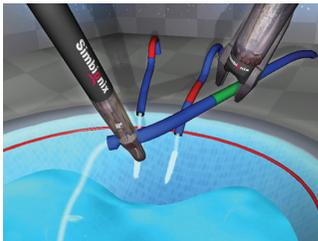
Module One – Simulator Session

1. Basic Skills Simulator Training

Instructions:

Before each task is performed, provide a full demonstration by an experienced operator, with an opportunity for the participant to ask questions.

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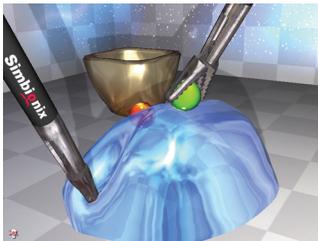
Task 5 - Clipping and Grasping

Task Description:

Safely grasp and clip leaking ducts within a specified segment, before the pool fills.

Required Skill Level (Darzi et al.)

- ◆ Time taken < 100 s



Task 6 - Two-Handed Maneuvers

Task Description:

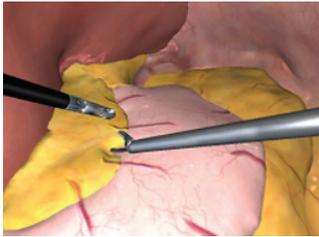
Use two graspers to locate the balls within the jelly mass and then place them in the endobag.

Required Skill Level (Darzi et al.)

- ◆ Total time taken < 90 s
- ◆ Total number of movements < 100
- ◆ Total path length < 440 cm

The required skill level for the basic skills is based on Development of a virtual reality training curriculum for laparoscopic cholecystectomy (Darzi et al. British Journal of Surgery 2009; 96: 1086–1093).

2. Gastric Bypass Simulator Training



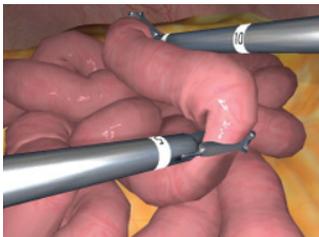
Gastric Bypass - Case 1: Creating the Gastric Pouch

Task Description:

The case starts with the liver already retracted cephalad.
The patient's BMI is 40.

Create a gastric pouch as follows:

- ◆ Select your preferred trocar configuration from the Trocar Config menu.
- ◆ Expose the left crus of the diaphragm at the level of the angle of Hiss to mark the subsequent cutting direction of the linear cutter.
- ◆ Identify the third vessel at the lesser curvature of the stomach to initiate dissection.
- ◆ Create an opening at the lesser omentum close to the stomach between the second and third vessel, and continue the dissection posteriorly to enter the retrogastric space.
- ◆ Introduce the linear cutter and cut the stomach horizontally.
- ◆ Reload the linear cutter and introduce it again to cut the stomach vertically towards the left crus of the diaphragm.
- ◆ Fire the linear cutter repeatedly until the gastric pouch is disconnected from the rest of the stomach.
- ◆ Make sure that you do not include the fundus in the pouch and do not cut the esophagus.



Gastric Bypass - Case 2: Measuring and Dividing the Jejunum

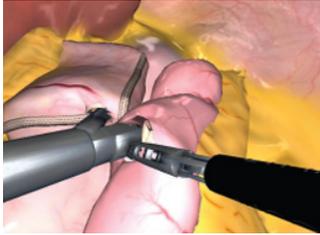
Task Description:

Measuring and dividing the jejunum into duodenojejunal limb and gastrojejunal limb.
The case starts with the greater omentum and the transverse mesocolon already retracted cephalad.
The patient's BMI is 40.

Divide the jejunum as follows:

- ◆ Select your preferred trocar configuration from the Trocar Config menu.
- ◆ Identify the ligament of Treitz at the base of the transverse mesocolon.
- ◆ Measure the jejunum starting from the ligament of Treitz; 40 cm for the duodenojejunal limb and an additional 100 cm for the gastrojejunal limb.
- ◆ Divide the jejunum using the linear cutter at a distance of 40 cm from the ligament of Treitz.
- ◆ Make sure you identify the duodenojejunal limb by tracing it back to the ligament of Treitz.

- ◆ Mark the duodenojejunal limb by placing a clip on the staple line using the clip applicator.
- ◆ Measure the length of the gastrojejunal limb starting from the point of jejunal division.



Gastric Bypass - Case 3: Gastrojejunal Anastomosis

Task Description:

The case starts after the division of the jejunum and the stabilization of the gastrojejunal limb next to the gastric pouch. The gastrojejunal limb is represented by a short segment of the jejunum.

Perform the gastrojejunal anastomosis as follows:

- ◆ Select your preferred trocar configuration from the Trocar Config menu.
- ◆ Use the harmonic scalpel to create an incision in the gastrojejunal limb at a safe distance from the staple line at the end of the limb. Create a second incision in the gastric pouch.
- ◆ Insert the linear cutter through both incisions and perform the gastrojejunal anastomosis.
- ◆ Click finish to view a video that shows how to close the opening remaining from linear-cutter anastomosis with a continuous suture.



Gastric Bypass - Case 4: Enteroenterostomy Anastomosis

Task Description:

The case begins with the possibility of choosing between anatomical positions A or B. In A, the stump of the duodenojejunal limb is proximal, in B, distal. The jejunum has been divided and the duodenojejunal limb, stabilized next to the distal part of the gastrojejunal limb. Each limb is represented by a short segment of the jejunum.

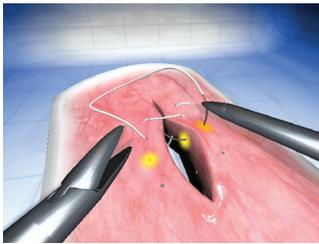
Perform the enteroenterostomy as follows:

- ◆ Select your preferred trocar configuration from the Trocar Config menu.
- ◆ Create an incision in the duodenojejunal limb at a safe distance from the staple line using the harmonic scalpel.
- ◆ Create a second incision in the gastrojejunal limb.
- ◆ Insert the linear cutter through both incisions and perform the enteroenterostomy.
- ◆ For position A: If you choose to use the linear cutter to close the opening left by linear-cutter anastomosis, use the linear cutter again to enlarge the passage between the anastomosed limbs. This will prevent future stenosis. Alternatively, click 'finish' to view a video that shows how to close the opening with a continuous suture.
- ◆ For position B: Click 'finish' to view a video that shows how to close the opening with a continuous suture.

3. Suturing - Optional

Objectives:

- ◆ To acquire the skills to perform continuous suturing accurately and efficiently
- ◆ To pick the needle up from different locations on the tissue surface
- ◆ To learn how to approach different suture line orientations
- ◆ To pass the needle at equal width, depth and intervals in order to create a regular and symmetrical closure
- ◆ To practice “taking the bite” in one or two sequences
- ◆ To use the lifting technique to pass the needle through the tissue
- ◆ To learn thread withdrawal techniques (short withdraws, pulley)
- ◆ To tighten the suture after each passage of the needle
- ◆ To demonstrate the ability to perform anastomosis using either continuous or interrupted suturing



Basic Suturing Task 2 – Continuous Sutures

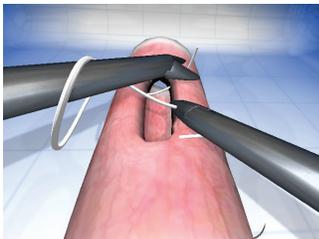
Task Description:

Practice the principles of continuous suture - a series of stitches performed with one thread along a suture line.

Three Sequential Tutorials:

At the beginning of the task, select the dominant hand you wish to practice with. The task will be adjusted accordingly.

Each tutorial begins with the thread already fixed to the tissue at the top of the suture line. Follow the visual instructions presented while you create the first stitch. Repeat it freely for the rest of the stitches.



Advanced Suturing Task 5: Anastomosis

Task Description:

Free hand practice of forming an anastomosis using either continuous or interrupted suturing.

The model demonstrates the anastomosis between a gastric pouch and a jejunal limb, often used in digestive tract surgery such as gastric bypass.

4. Hernia - Optional

Instructions:

The Intercollegiate Surgical Curriculum Programme includes in the technical skills and procedures, a repair of internal hernia after gastric bypass. The following simulation case may be practiced on the LAP Mentor.

Objectives:

- ◆ To learn the skills for carefully separating the adhesion to expose the hernia defect.
- ◆ To detect and learn how to avoid potential complications of the hernia procedure.
- ◆ To become familiar with and practice safe use of prosthetic mesh, suturing and mesh fixation devices.



Hernia Case 4 - Epigastrium Incisional Hernia

Task Description

Practice a simulated epigastrium incisional hernia procedure.

Medical History:

A 50-year-old woman with a history of abdominal operations for small bowel obstruction, about three years prior to admission. Physical examination revealed an irreducible bulge within the upper laparotomy scar in the epigastrium. CT-scan showed small bowel loops herniated through the defect of the anterior abdominal wall in the area corresponding to clinical finding of an incisional hernia.

Pathology:

Epigastrium incisional hernia where the small bowel loops through the defect of the anterior abdominal wall.