SSM Log Book

Laparoscopic & Robotic Surgery

21/1/2019 - 15/2/2019

DELTA Centre

Mr Abdul

Key:
A = Assisted
O = Observed

21/1/2019

AM – INTORDUCTION

Met Mr Abdul on Monday morning for introductory talk. He gave lots of information regarding what was expected from me and what experiences were on offer for me to benefit from. I was told I needed to keep a narrative log book of all my learning points and that I would need to complete a presentation in order to be signed off for this placement.

AM – SURGICAL THEATRE 1, MR BHATTI

Operation(s):

- Laparoscopic Cholecystectomy (A)

I was thrown in at the deep end on my first day. I was able to scrub up and assist with the liver retractor, scope and closing. I really enjoyed the session and both Mr Bhatti and the registrar (James) were excellent teachers. James taught me how to close with a few interrupted stitches but he told me I need to work on my instrumental tying technique.

Learning Points:

- Camera to be held with buttons up and anticipate surgeon's next move
- Always keep camera with level horizon
- Basic interrupted subcutaneous suturing and needle safety

PM – GYNAE THEATRE 1, MR ABDUL

Operation(s):

- Laparoscopic BSO (O)
- Laparoscopic R Ovarian Cystectomy (O)

Despite not scrubbing up for this list, I was able to witness some key learning points. Mr Abdul arranged for the two resident STORZ technicians to have a chat with me about their role and some basic information about some of the operating systems they have in place at the hospital. I found this session really valuable and think it has given me a better insight into the overall activities of the theatres. In terms of the operations, I was able to see an ovarian cyst removed intact! I was able to appreciate the great skill and patience this took. There was also a 'near-miss' incident during the BSO as the patient had

hepatomegaly and adhesions due to liver metastases (1^{o} breast) and the liver was nearly injured when inserting the first port.

Learning Points:

- Always test for leaks in the gas system before starting ie turn on, close tap and shouldn't be any leaks
- When removing cysts, try to create traction from two points on surrounding capsule rather than pulling on the cyst itself
- Level patient before closing ports (where possible) to release as much gas as possible to avoid diaphragm irritation (ie shoulder tip pain) post-operatively

22/1/2019

ALL DAY – GYNAE THEATRE 2, MR ABDUL

Operation(s):

- EUA + Vaginal Biopsies (O)
- Fenton's Procedure (O)
- RSO + Adhesiolysis (A)
- TLH (ABANDONED) (A)
- TLH + BS, Ovaries Spared (A)

Today was my first encounter with cystoscopy, Fenton's procedure and uterus manipulation using metal instruments. Following research of Fenton's, I saw that most cases created a vertical incision of the posterior vaginal opening then sutured the tissues horizontally to create more space. However, in this case, Mr Abdul removed a rhomboid piece of fibrous tissue then sutured horizontally. In two of the procedures, I was able to insert a pre-op and intra-op catheter, though I need to do this more often to get more confidence with this skill. I scrubbed in for three of the cases and manipulated the uterus using metal instruments, which was different equipment to that I've used previously. During my Obs & Gynae rotation at King's Mill, I used a VCare uterus manipulator, which I found much more comfortable to use and felt that the cup around the cervix would aid the surgeon when dissecting the cervix from the vagina. I also felt the McCartney tube was more cumbersome than the VCare manipulator, though I can see why there is a place for it following removal of the uterus prior to suturing. I spoke to MR Abdul about this on 25/1/2019 and he described how the VCAre manipulator is much easier to use but also carries risks if training is not top-notch. I saw the Harmonic shears in action to seal a bleeding vessel. I began to feel more comfortable with the equipment and my surroundings as the list went on.

Learning Points:

- Basic principles of Fenton's procedure
- Equipment variations between surgeons and hospitals
- Harmonic equipment to induce homeostasis
- Basic suture techniques on skin pad

23/1/2019

AM – SURGICAL THEATRE 6, MR BHATTI

Operation(s):

- Laparoscopic Cholecystectomy (O)

This session furthered my learning regarding laparoscopic techniques in patients with a high BMI. In this case, diathermy had to be used to pass through some of the subcutaneous fat before passing the visiport. I also saw more dissection than previously due to large stones affecting the ability to manipulate the gallbladder with ease. A variation I have noticed so far between gynae and HPB surgeries is the retrieval bags used to remove the tissues. Gynae tend to use bags that automatically open inside the abdomen while HPB tend to use the manual version. I discussed this with Mr Abdul on 25/1/2019 and he said this mainly due to surgeon preference and training, but also that cost may come into the decision.

Learning Points:

- Variations in laparoscopic techniques in larger patients
- Different methods for tissue retrieval

AM – GYNAE THEATRE 1, MR ASHER

Operation(s):

- Hysteroscopy + Endometrial Biopsies (O)
- TLH + BSO (O)

Again, the patients I saw were larger than average, so surgery was slightly more complex. Hysteroscopy was difficult as the cervix was hard to visualise and mobilise, but enjoyed seeing slightly different equipment in use and how the principles vary slightly. This patient was likely to need a hysterectomy, however, due to their size and co-morbidities, they were unlikely to be a candidate for laparoscopic surgery. During the hysterectomy, the uterus was quite difficult to remove vaginally as it was bulky. At first, I wonder if this might have been easier with the VCare manipulator but, after some research, I learnt that VCare is less effective in larger uteri due to its flexibility and light structure (van den Haak et al, 2015).

Learning Points:

- Limitations of laparoscopic surgery based on patient factors eg BMI, co-morbidities
- The need for various techniques of the same procedure to account for patient and operator practicalities

PM – SURGICAL THEATRE 6, MISS SMITH

Operation(s):

- Laparoscopic Ileo-Colic Resection – OPEN (O)

This operation gave me an insight into a new entry method for laparoscopic surgery. Miss Smith used an Applied Medical Gelport, which allows a number of ports to be inserted into one entry point via a gel block to maintain pneumoperitoneum. It also allowed quick and easy access to the abdomen when the decision was made to convert to open surgery. While this piece of equipment was very useful in this instance, I noticed that such a small area to insert instruments meant that they were prone to clashing, making it difficult to visualise and manipulate tissues. Also, one of the ports was assigned the title of 'swab port' as passing swabs in and out through these ports meant that their seal could be damaged.

Learning Points:

- Gelport entry techniques and equipment
- Limitations and benefits of single-port access

24/1/2019

AM – SURGICAL THEATRE 5, MR AWAD

Operation(s):

- Staging Laparoscopy + Peritoneal Washings + Gastroscopy (O)
- Laparoscopic Sleeve Gastrectomy (O)
- Laparoscopic Sleeve Gastrectomy (O)

Mr Awad was very keen to teach me some basic principles of laparoscopic surgery. He used a modified Hasson technique for entering the abdominal cavity to avoid risks associated with blind entry with a Veress needle. We also discussed the various pressures used by different specialties ie general 12mmHg vs gynae 20mmHg. A faulty scope warmer also demonstrated how vital it is for having a good picture from the start of the procedure. He explained how the Harmonic scalpel has revolutionised how sleeve gastrectomies are performed via laparoscopy and demonstrated how quickly the excess stomach can be removed using the tri-staplers.

Learning Points:

- Modified Hasson vs Veress entry methods
- The role of Harmonic scalpel in development of laparoscopic surgical techniques
- Intra-abdominal pressures for varying procedures
- Scope warmers are an essential piece of equipment to reduce the risk of camera 'fog'

PM – GYNAE MDT

The team discussed almost 40 patients, including some via video link to another hospital. The team consisted of a radiologist, pathologists, oncologists, gynaecologists and cancer clinical nurse specialists. It was a valuable experience to witness the decisions made between the team and how each specialty had a critical role in patient care.

Learning Points:

- MDT management of a variety of gynaecological cases

25/1/2019

AM – GYNAE OUTPATIENTS DEPARTMENT, MR ABDUL

Clinic today was a mixture of new and follow-up patients, allowing me to see a variety of clinical presentations and treatments. We discussed when it's appropriate not to treat patients with surgery, for example when patients have had multiple complex abdominal surgeries or when the procedure is unlikely to give a long-term benefit while potentially exposing the patient to serious morbidities. I saw a wide range of gynaecological pathologies from dermoid cysts to vulval pathologies.

Learning Points:

- When and when not to treat certain patients with surgery
- Review of gynae examination techniques
- Importance of monitoring patients post-operatively in gynae-oncology patients

28/1/2019

AM – SURGICAL THEATRE 7, MR WILLIAMS

Operation(s):

- Laparoscopic Nephrectomy (O)

This procedure was very difficult due to the fragility and vascularity of the tissues, meaning there were multiple points of the procedure when opening the patient was discussed. I saw the use of polymer Hem-o-lok clips to control bleeding, though they seemed quite flimsy. After some research, I learnt that these clips non-conductive and don't interfere with MRI, CT and X-ray imaging, unlike the metallic alternatives. Also, Harmonic shears may not have been a suitable alternative as they can only manage vessels up to 7mm diameter.

Learning Points:

- Polymer vs metal ligation clips

- Different positioning of renal patients for laparoscopic surgery

PM – GYNAE THEATRE 1, MR ABDUL

Operation(s):

- TLH + BSO + Lymph Node Dissection (A)
- TLH + BSO (A)

This is the first time I've seen pelvic lymph node dissection and I was amazed by the simple principles while dealing with such delicate and important tissues. Mr Abdul described following the plane of the vessels in a stroking motion to detach the majority of the lymphatic tissues without the need for energy devices. The dissection was left open to avoid the unnecessary risk of damaging the remaining structures.

Learning Points:

- Importance of anatomical relations and borders when dissecting pelvic lymph nodes
- Gentle dissection can be carried out by stretching tissues in particular planes
- Energy devices do not always have a place in dissection techniques

29/1/2019

ALL DAY – GYNAE THEATRE 2, MR ABDUL

Operation(s):

- Laparoscopic Sterlisation (A)
- Laparoscopic Adhesiolysis (A)
- TLH + BSO (A)

During the adhesiolsysis case, I was able to hold the camera under Mr Abdul's guidance. While I managed reasonably well, it demonstrated how much training and technique development is needed to become even competent in these skills. The TLH required a lot of dissection and adhesiolysis to mobiles the uterus and adnexa. For this, the harmonic was mainly used though there was a need for diathermy in this case.

Learning Points:

- Basic camera technique including maintaining the horizon and keeping active instruments central to the screen
- Harmonic shears are not always the best tool for inducing haemostasis

30/1/2019

AM – SURGICAL THEATRE 8, MISS SMITH

Operation(s):

- SILS Ileocolic Resection (O)

Again, Miss Smith used Gelport equipment to gain access to the abdomen. She describes how she does her anastamoses by hand so multiple ports are not indicated in this case. While the operation was not completed as planned due to normal anatomy and lack of indication for resection, the entry techniques and adhesiolysis was all as planned. I was impressed by the small size of the final wound as such a large amount of bowel had been passed through it via the Alexis wound protector/retractor.

Learning Points:

- Benefits of using Alexis wound protector/retractor in abdominal surgery
- Importance of only performing surgery if indicated, regardless of prior diagnosis

31/1/2019

PM – SURGICAL THEATRE 5, MR AWAD

Operation(s):

- Laparoscopic Gastric Bypass + Liver Biopsy (O)

A 50^{o} scope was used for this case and it gave a great view of the upper abdomen from a bird's eye view. Many of the instruments used were ones I had seen before but used in a different way. For instance, the tri-staplers were used to anastamose bowel rather than remove it. I also noticed that Mr Awad tends to use the green theatre lights when operating and, following some research, I learned that this is to improve the contrast between screens and the rest of the operating room. The researched showed that this was most effective when paired with red lights in certain areas of the room.

Learning Points:

- Use of various pieces of equipment in different setting and for different purpose
- Use of room lighting to improve operating conditions

1/2/2019

AM – SURGICAL THEATRE 5, MR MADHOK

Operation(s):

- Laparoscopic Cholecystectomy (A)

I assisted in this case and saw a lot of similarities to those performed by Mr Bhatti. One major difference was that Mr Madhok ties off the gallbladder with sutures rather than clips. When we discussed this, he explained that this is what is normally done in open surgery and they are proven to be more effective than metal clips. We also spoke about the reasoning behind using pressures of 12-15mmHg with regards to venous return.

Learning Points:

- Many techniques used in open surgery do not need to be changed despite laparoscopic alternatives being available
- The effect of increased IAP on venous return

4/2/2019

AM – SURGICAL THEATRE 9, MR THOMAS

Operation(s):

- Robotic Prostatectomy (O)

The SI da Vinci robot has 4 arms available for instruments and 5 ports were inserted into the patient – 2 for the assistant and 3 for the surgeon/robot. Mr Thomas explained the major differences between laparoscopes and the da Vinci camera, including that it has two lenses for 3D vision and much better zoom for small spaces. The instruments have wrist-like articulations which make intricate surgery seem effortless.

Learning Points:

- Basic principles of robotic surgery
- Differences and similarities of equipment between robotic and laparoscopic surgery

PM – GYNAE THEATRE 1, MR ABDUL

Operation(s):

- Vulval Biopsies (A)
- Hysteroscopy + Diagnostic Laparoscopy (O)
- TLH (A)

We discussed some basic principles of hysteroscopy including keeping the camera level and maintaining high water pressure. The TLH case was very difficult due to very vascular tissue and lots of adhesions. While it was taxing, when all the risks are identified and negotiated, the surgery was performed safely laparoscopically.

Learning Points:

- Basics of hysteroscopy
- Identifying and managing risks improves safety of laparoscopic surgery

5/4/2019

AM – GYNAE THEATRE 2, MR ABDUL

Operation(s):

- TLH + BSO (A)
- TLH + BSO (A)
- Removal of Ectopic Pregnancy (O)

Both cases were tricky as the first had a very high BMI and the second had adhesions between bladder and cervix. A Palmer's point was attempted in the second case, but upper abdomen adhesions meant that umbilical point entry was the safest and most effective.

Learning Points:

- Entry point variations for known adhesions
- Option to suture vaginally if laparoscopic suturing is difficult

PM – GYNAE ASSESSMENT UNIT

I saw many cases including endometriosis exacerbation, bleeding in early pregnancy and abdominal pain. It was chance to refresh and improve my emergency gynaecology management knowledge and work with new members of staff.

Learning Points:

- Varying presentations of acute gynaecological conditions

7/2/2019

AM – GYNAE THEATRE 1, MISS TIRLAPUR

Operation(s):

- Laparoscopic Sterilisation (O)
- Laparoscopic Sterilisation (O)
- Hysteroscopy (O)
- Hysteroscopy + Endometrial Biopsies (O)

One key difference I noticed in the laparoscopic cases was that the gas was kept off when entering the patient with the Veress needle. Miss Tirlapur explained that she did this so, if the Veress needle ended up in an undesired location, that it would immediately begin filling with gas. Other consultants enter the patient with the gas on so it provides feedback on which cavity the needle is situated ie the pressure should drop to below 10mmHg when in the peritoneal cavity.

Learning Points:

- Variation of Veress needle entry
- Review of basic hysteroscopy techniques

8/2/2019

AM – SURGICAL THEATRE 6, MR MADHOK

Operation(s):

- Laparoscopic Cholecystectomy (A)
- Open Repair of Umbilical Hernia (A)

Mr Madhok allowed me to hold the camera for the laparoscopic procedure. It went well as I felt I had learnt key, basic principles from my time with Mr Abdul and felt quite comfortable holding and manipulating the camera. He also allowed me to manipulate the gall bladder and put it in the retrieval bag. I closed the second patient with staples. I really valued my time in this theatre as it allowed me to work on my practical surgical skills.

Learning Points:

- Handling of laparoscope
- Improving hand-eye coordination with regards to manipulating instruments and tissues
- Basic closing techniques

11/2/2019

ALL DAY – BASIC SURGICAL SKILLS COURSE

This was the first Basic Surgical Skills Course run by the DELTA Centre and I was involved in its preparation and setup as well as presenting an overview of robotic surgery. Throughout the day, I helped teach basic knot-tying techniques as well as suturing. I was also able to practice laparoscopic suturing and have a go at a number of laparoscopic teaching exercises. I found this course extremely useful, not only for my own learning, but also my personal development with regards to my presentation and teaching skills. I hope that this course continues to be beneficial to others as much as it was for me.

Learning Points:

- Laparoscopic surgery entry techniques, complications and energy devices
- Laparoscopic suturing, knot-tying and teaching exercises
- Stacks systems and camera handling

12/2/2019

ALL DAY – GYNAE THEATRE 2, MR ABDUL

Operation(s):

- Laparoscopic Sterilisation (O)
- TAH + BSO (A)
- TLH + BS (A)
- TLH + BSO (A)

Most of the cases on this list were very difficult due to previous surgeries and known adhesions. While this meant the cases were more complex, it gave me an insight into various tricks and tips to improve the chances of completing the operation laparoscopically. Mr Abdul put the camera through different ports throughout one procedure in order to visualise adhesions in closer detail. I was able to improve my skills in manipulating the uterus, handling the McCartney tube and using methylene blue to assess bladder integrity.

Learning Points:

- Know when laparoscopic surgery is not appropriate
- Use ports creatively when dealing with difficult cases
- Treating extensive adhesions laparoscopically

13/2/2019

ALL DAY – GYNAE THEATRE 2, MR BALI

Operation(s):

- TLH + BS (A)
- TAH + BSO (A)
- TLH + BSO (A)

During the day, we discussed the use of the Thunderbeat energy device rather than the Harmonic scalpel when bipolar might be needed, despite its wider spread of heat. The 3D scope system was used in the final case which was very interesting to see. It made a huge difference with regards to depth perception and detailing fine structures. I assisted in all cases today and was able to open the laparotomy case as well as close and use energy devices, all of which I am very thankful to Mr Bali and Dr Geary for guiding me.

Learning Points:

- Thunderbeat vs Harmonic
- 3D scope system
- Laparotomy opening and closing techniques