FEATURE

The never-ending story

Is the surgical pharmacist a specialty of the future, or of today?

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Imagine your typical day on a typical surgical ward …

You arrive on the ward early in the morning; the nurse coordinator tells you who will be discharging. You check the list of non-imprest medications written by nurses. You have a list of new patients you need to see. If you're lucky, you might be joining the doctor for their morning round. Later in the day, doctors start giving you discharge scripts; you prepare medication lists; counsel patients about changes to their medications; and you continue seeing new patients. What, it's lunchtime already? – but I haven't had my morning coffee yet!

> Surgical wards have traditionally been grouped as 'miscellaneous' wards that can be covered by a pharmacist of any skill level. But will you ever ask an ENT surgeon to remove your appendix? How about a urologist to fix your broken elbow?

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You come back to the ward after lunch, seeing more new patients who, earlier, were in theatre. You do the medication reconciliation, and may be sorting out some medication issues, answering queries from nurses and junior doctors. You get home late, tired and wonder what you have achieved today. You start to think about your colleagues who work in the 'specialty' areas. You start to plan, 'One day, I am going to be a haematology pharmacist. One day, I am going to be a transplant pharmacist. One day, I am going to be an ICU pharmacist …one day …'

Why is it pharmacists don't typically consider the surgical ward a specialty ward?

How many times have you seen patients having their morning medications withheld unnecessarily because they are 'fasting'? What happens when a beta blocker is withheld on the day of surgery? What happens if an oral DOAC was not withheld for an appropriate interval before surgery? Have you ever seen a junior doctor prescribe 10mg IV Vitamin K for a patient on warfarin with a therapeutic INR because the surgeon wants the INR to be below 1.3? Have you seen nurses withhold insulin glargine the night before surgery? Have you thought about the impacts these decisions have on patient outcomes? There are so many important things that a surgical pharmacist can contribute to the overall care of a patient – before, during and after surgery.

What about pharmacists' involvement in the development and/or implementation of Enhanced Recovery After Surgery (ERAS) in your surgical specialties? ERAS is an evidence-based pathway which has been shown to reduce perioperative stress, maintain postoperative physiological function and accelerate recovery after surgery. The implementation of the ERAS pathway within individual institutions via a multimodal and multidisciplinary approach has been consistently shown to reduce rates of morbidity, improve recovery and shorten length of stay (LOS) after surgery.[1]

Not just another patient – a long, complex story

Imagine you are the surgical pharmacist working in a General Surgical ward. You are seeing a new patient on your ward admitted post high anterior resection. What is your 'typical' process?

Most (if not all) pharmacists will be performing medication reconciliation, documenting the patient's regular medications prior to admission and reconciling against the medication chart. Most institutions will have this process documented as part of the pharmacist's daily KPIs. You will also likely be checking the vital signs, laboratory results, monitoring the patient's progress and performing discharge counselling and reconciliation at the end of the patient's journey. This same process (in part or whole) is likely to be repeated for at least 20 patients every day. At the end of the working day, how do you feel? Are you satisfied with your work?

> Working on the surgical ward is like reading a random chapter of a book. You might get some idea of what the book is all about, but you will never know the whole story.

Let's wind back the clock and take a walk through this high anterior resection patient's journey before his surgery. The patient is a 66-year old gentleman who had a colonoscopy-proven sigmoid polyp adenocarcinoma. He went for a colonoscopy after the routine faecal occult blood test came back positive. Prior to the test, he was asymptomatic. He was seen by the surgeon in the clinic; his type of surgery, risk and benefits were explained; his consent form was signed. In the pre-admission clinic, he was interviewed by the pharmacist and anaesthetist. His medications were rationalised, and he was advised to withhold his oral diabetic medications on the day of surgery. His options for anaesthesia were explained, and he chose to go under general anaesthesia (GA). All this discussion and planning took place about two weeks before his procedure.

On the day of his surgery, he was given pre-op carbohydrate drinks and a single dose of pregabalin and oral paracetamol in the theatre holding bay before the surgery. Inside the operating theatre, he was given fentanyl and propofol as induction agents, while the whole surgical procedure was maintained with sevoflurane gas and a remifentanil infusion. During the 3.5 hour procedure, the surgeon performed a laparoscopic anterior resection. The patient was also given rocuronium as the neuromuscular blocking agent, a lidocaine continuous infusion as analgesia, ondansetron and dexamethasone as antiemetics, a metaraminol continuous infusion to maintain his blood pressure, and sugammadex at the end of the case to reverse rocuronium. At the end of the procedure, the surgeon performed a bilateral transversus abdominis plane (TAP) block with ropivacaine (lidocaine infusion was ceased prior to the TAP block). He was transferred to the post-anaesthesia care unit, where his BP and pain score were monitored, and then he was transferred to the general surgical ward – where you see this patient for the first time.

What is the surgical pharmacist's special challenge?

Working on the surgical ward is like reading a random chapter of a book. You might get some idea of what the book is all about, but you will never know the whole story. If you think surgical pharmacy is indeed a specialty, though, you might opt to read the whole book, where you will realise this patient has gone through multiple processes involving medications before you see him on the ward. There are so many interventions a pharmacist can make for this patient, both before and after his surgical procedures. These include, but are not limited to:

- Medication rationalisation prior to surgery. This is generally done by the pre-admission clinic pharmacist, where medications are withheld and/or rationalised to minimise the risk of adverse events intra- and post-operatively.
- Emotional support. Surgery is scary and invasive; imagine how the patient feels when he was told he needs to have a surgery to remove part of his sigmoid colon and rectum. Reassuring the patient, even with pain control post-operatively, can have a significant impact on a patient's anxiety. And yes, this is also an interesting area where a surgical pharmacist can learn so much about different types of surgical procedures, potential complications, monitoring, etc.

- Pre-operative medication. What can we contribute and/or learn from anaesthetists about the pre-operative analgesia used for different types of procedures to reduce post-op pain?
- Medications used intra-operatively by anaesthetists. Ever wonder why some of your patients were pain-free immediately after the procedure while others had significant pain? What about post-op nausea and vomiting (PONV)?
- Post-operative analgesia – multimodal analgesia, opioid sparing. What happened inside the operating theatre plays a significant role in terms of pain control post-operatively. Could this contribute to the patient's overall falls risk, and what additional interventions need to be implemented to prevent a fall or hospital-acquired complications? What about monitoring for efficacy of the analgesic regimen, preventing/identifying ADRs and post-operative complications?
- Discharge medications. Does the patient require antibiotics? What about analgesia? What can you do to optimise the patient's care while minimising the supply of opioids on discharge?

There are also many things a surgical pharmacist can learn from this patient's journey:

- What is the rationale of the pre-op carbohydrate drink? How is this simple drink going to affect the patient's outcome after surgery and his blood sugar control?
- What is 'high anterior resection'? Was it done laparoscopically or was it a laparotomy procedure? How does the type of procedure impact on post-operative pain management?
- What are all the drug cocktails given to the patient by anaesthetists intraoperatively? What impact do they have on the post-operative care of the patient?
- Are you curious about how and when the neuromuscular blocker was given in theatre? How about its reversal agent? How does the use of sugammadex impact your theatre drug budget?
- Are you able to reduce your theatre drug budget by giving oral paracetamol +/- NSAID as a pre-operative medication prior to surgery instead of IV intraoperatively?
- What is a local anaesthetic block? And what is the rationale of giving lidocaine as a continuous infusion during the surgical procedure?

Not a dumping ground for just any pharmacist

Surgical wards have traditionally been grouped as 'miscellaneous' wards that can be covered by a pharmacist of any skill level. But will you ever ask an ENT surgeon to remove your appendix? How about a urologist to fix your broken elbow? Most hospital pharmacy departments still expect any ward pharmacist to be able to provide pharmacy services to any surgical ward.

Unlike doctors, pharmacy as a profession has never had a formal training curriculum in place for any surgical specialties. The Board of Pharmacy Specialties (BPS) from the United States offers credentialing qualifications for a dozen specialty practices, each of which acknowledge qualified pharmacists who are able to practice pharmacy at advanced practice levels. None of these 12 qualifications cover any surgical specialty.

But if you are willing to read the whole book rather than a random chapter each time you see a surgical patient, you might be surprised to find out how colourful that book is. It is definitely more exciting than 'Harry Potter', and even sexier than 'Fifty Shades of Grey'.

You never know – one day you might be the author of another book: the origin story for the surgical specialty of your choice, and how it became one of the BPS-certified specialties for advanced practice pharmacy.

Oh, by the way, if you're new to surgical practice, you should consider joining the SHPA Surgery and Perioperative stream. You can read about interesting and fascinating surgical stories from many amazing pharmacists and their impact on patients' care. These stories may still be random chapters, or – with your help – they could weave together into the epic tale of the surgical specialty. ●

REFERENCES

1. Ljungqvist O, Scott M, Fearon KC. Enhanced Recovery After Surgery: A Review. JAMA Surg 2017; 152(3): 292–298. doi:10.1001/jamasurg.2016.4952.