

Editorial Comment

Lene Jarlbaek* and Mads U. Werner

When surgery prompts discontinuation of opioids

<https://doi.org/10.1515/sjpain-2021-0165>

Published online September 27, 2021

For decades, societies and health care systems have been concerned about the potential risk for misuse and abuse of opioids instigated by the pain treatment procedure *per se*. In recent times, the surgical domains have been accused of creating long-term users of opioids initiated by the intention to manage postoperative pain. Numerous studies have been published presenting the proportions of postoperative, long-term opioid users among postoperative patients [1–3]. Fewer studies have looked at the proportions of patients who actually stopped taking opioids after having had surgery performed. A very unobvious way to illustrate this issue is to do a simple search in PubMed, where ‘use of opioids after surgery’ rendered 19,039 hits, while ‘cessation of opioids after surgery’ rendered 152 hits.¹ This makes one consider how our treatment behaviors may be influenced by ‘the general impression’ rather than hard evidence.

The recently published study in the *Scandinavian Journal of Pain* by Larsson et al. seems to join this impressive volume of papers from surgical departments [4]. The authors performed a retrospective study of all patients in the Swedish county Västerbotten (population 270,000) who in 2018 underwent cholecystectomy (CC; n=297) or gastric bypass (GBP; n=93). The authors examined predictive variables associated with postoperative, long-term prescription of opioids. Contrasting with many related studies only using electronically registered prescription data, the authors made a commendable work in checking

the patients’ medical records documenting the reasons for the use of opioids after surgery.

The results came out rather surprising. The study included 390 patients. Only 20 of 109 patients, who used opioids prior to surgery, were also registered as long-term users postoperatively (CC: 12 and GBP: 8). All 20 patients had reasons for long-term opioid use unrelated to the surgery, including 10 patients treated for affective disorders, of whom six, in addition, used benzodiazepines. None of 281 patients, who were opioid-naïve prior to surgery, became long-term opioid users. The take-home messages from this study are; *first*, that 82% of patients, who used opioids prior to surgery, did not continue with long-term opioid use after surgery. *Second*, the few long-term opioid users had legitimate reasons for opioid use unrelated to surgery. *Third* and not least, no opioid naïve patients in the study were registered as long-term opioid users.

Larsson et al.’s study underlines the importance of exploring the individual reasons for the patients being treated with opioids both prior to and after surgery. The role of opioids in a rational pain management program should be assessed. The study also emphasizes the importance of assembling solid evidence before judgments can be drawn to which degree surgery contributes to the establishment of long-term opioid use and whether surgery is actually fueling the opioid epidemic [1]. The stakes are high: Failed postoperative pain management, whether acute, intermediary, or persistent, continues to be a major surgical problem [5]. Although an overall reduction in the perioperative opioid load is advantageous and rational, a perioperative opioid stewardship [6] included as a component in ERAS (Enhanced Recovery After Surgery) can be instrumental in providing pain relief and improvement of rehabilitation outcomes.

A recent survey exploring potential facilitators and barriers to routine preoperative opioid screening in different types of surgery showed that only 7% of the patients were screened preoperatively for opioid use [7]. A total of 38% of the patients self-reported that they had used opioids in the year prior to surgery, but only 3% of those had had a screening for preoperative opioid use documented in their records. Among the reported barriers for preoperative screening were insufficient time, lack of

¹ Search date; 14 Sept 2021, using the two mentioned search terms; ‘use of opioids after surgery’ and ‘cessation of opioids after surgery’.

***Corresponding author: Lene Jarlbaek**, REHPA – The Danish Knowledge Centre for Rehabilitation and Palliative Care, Department of Clinical Research, University of Southern Denmark and Odense University Hospital, Vestergade 17, DK-5800 Nyborg, Denmark, E-mail: lene.jarlbaek@rsyd.dk. <https://orcid.org/0000-0001-8702-6788>

Mads U. Werner, Department of Anesthesia, Pain and Respiratory Support, Neuroscience Center, Rigshospitalet, Copenhagen, Denmark, E-mail: sjpainmw@gmail.com. <https://orcid.org/0000-0003-1540-8845>

clarity regarding who was responsible for screening, and shortage of expertise in the management of chronic opioid use. A reasonable thought would be; ‘how on earth is it possible for physicians to provide rational, pharmacological pain treatment if unaware of the patient’s previous use of analgesics’, regardless of the treatment objective: post-operative pain or other pain conditions?

Without a doubt, the introduction of an opioid in a postoperative pain management scenario may lead to its long-term use. However, there are still many factors to consider before it is possible to describe a pattern of long-term opioid use in relation to specific surgical procedures or geographical areas [1, 3]. One reason for postoperative, long-term use of opioids is seldom reported in the literature. Namely the initiation of treatment for a previously untreated pain conditions, discovered when the patient is hospitalized. A Danish population-based study by Simoni et al. examining the elderly after hip fracture surgery (n=21,255) demonstrated that 15% of the previously opioid naïve patients (n=3,213) became long-term opioid users. The study indicated that some of these opioid naïve patients presented with untreated pain conditions when being admitted to the hospital. Interestingly, some of the opioid types used in postoperative pain management, i.e., buprenorphine, codeine fentanyl, oxycodone, and tramadol were more likely to be associated with long-term use compared to morphine [8]. The types of opioids chosen for long-term treatment, could generate the hypothesis that careful considerations were behind the opioid prescribing behavior, e.g., treatment of cancer related pain.

Several issues emerge from a study like Larsson et al.’s, both with regard to the use of claims data, definitions of persistent opioid use [9], and indications for surgery [10, 11]. Furthermore, a thorough examination of the surgical staff’s initiation of opioid treatment in pain conditions not previously diagnosed is mandatory and could be quite rewarding from a research perspective. However, more evidence is needed before the surgical domains can generally be deemed as contributors to long-term opioid misuse or abuse or as contributors to the opioid epidemic.

In conclusion, surgical departments may contribute to long-term opioid use – sometimes because of a conscientious prescribing practice, but sometimes to a prescription pattern potentially resulting in opioid use disorders. On the other hand, it should be recognized that surgery may

prompt the discontinuation of opioids since the surgical procedure may relieve the patients’ pain problems. The most prominent problem still left is – what is the optimal strategy in peri-operative pain management? Should evidence for optimal pain relief have the first priority, or should opioid-sparing procedures? Everything is still as complex as it used to be!

Research funding: None declared.

Author contributions: The authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Competing interests: The authors state no conflict of interest.

References

1. Neuman MD, Bateman BT, Wunsch H. Inappropriate opioid prescription after surgery. *Lancet* 2019;393:1547–57.
2. Brummett CM, Waljee JF, Goesling J, Moser S, Lin P, Englesbe MJ, et al. New persistent opioid use after minor and major surgical procedures in US adults. *JAMA Surg* 2017;152:e170504.
3. Sitter T, Forget P. Persistent postoperative opioid use in Europe: a systematic review. *Eur J Anaesthesiol* 2021;38:505–11.
4. Larsson V, Nordenson C, Karling P. Long-term postoperative opioid prescription after cholecystectomy or gastric by-pass surgery: a retrospective observational study. *Scand J Pain* 2021; 21:569–76.
5. Kharasch ED, Avram MJ, Clark JD. Rational perioperative opioid management in the era of the opioid crisis. *Anesthesiology* 2020; 132:603–5.
6. Fawcett WJ, Mythen MG, Scott MJ. Enhanced recovery: joining the dots. *Br J Anaesth* 2021;126:751–5.
7. Thiesset HF, Schliep KC, Stokes SM, Valentin VL, Gren LH, Porucznik CA, et al. Opioid misuse and dependence screening practices prior to surgery. *J Surg Res* 2020;252:200–5.
8. Simoni AH, Nikolajsen L, Olesen AE, Christiansen CF, Johnsen SP, Pedersen AB. The association between initial opioid type and long-term opioid use after hip fracture surgery in elderly opioid-naïve patients. *Scand J Pain* 2020;20:755–64.
9. Jivraj NK, Raghavji F, Bethell J, Wijesundera DN, Ladha KS, Bateman BT, et al. Persistent postoperative opioid use: a systematic literature search of definitions and population-based cohort study. *Anesthesiology* 2020;132:1528–39.
10. Jivraj NK, Scales DC, Gomes T, Bethell J, Hill A, Pinto R, et al. Evaluation of opioid discontinuation after non-orthopaedic surgery among chronic opioid users: a population-based cohort study. *Br J Anaesth* 2020;124:281–91.
11. Brummett CM, Myles PS. Opioid discontinuation after surgery. *Br J Anaesth* 2020;124:502–3.