



EXPERT'S CORNER: A PERSONAL APPROACH

Alternatives for post-operative pain treatment



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In this issue of the Journal, Dr. Adame-Coronel et al. report their experience in the article "US TAP-BLOCK", alternative in pain management subsequent to laparoscopic cholecystectomy in patients at the "Dr. José Eleuterio González" University Hospital. The article compares the ultrasound guided US TAP (transversus abdominis block guided by ultrasound) versus the conventional analgesia used in the treatment of acute postoperative pain in these types of surgery.

Postoperative pain treatment is very important for healthcare institutions for a variety of reasons. Its proper treatment influences the quality standards of hospital care offered to patients, as well as the additional hospital costs of bad management and the associated comorbidities linked to an inadequate management thereof. Despite pharmacological and technological advances, acute postoperative pain (APP) remains a challenge to solve for today's medicine.

There are several causes which impede proper APP management. Some that stand out are the poor training given to health professionals who intervene in ambulatory procedures, the limited information provided by patients and their relatives, and the lack of an organized structure which facilitates the implantation and standardization of proper analgesic protocols.

The type of pain produced and its management depends on the surgery, type, depth and injured organ or tissue. That being said, we ought to consider that APP should be treated considering the intensity of the pain caused by the surgical procedure, the analgesics and adequate combinations which enhance analgesic effects, rather than side effects, in addition to combining strategies of locoregional techniques associated with the surgical site.

Pain is classified regarding TEMPORALITY, in acute and chronic. Acute pain is produced in response to an injury. Most of the time the cause is identified and has a limited duration, usually no longer than 6 weeks, improving subsequent to the resolution of the triggering effect (in this case, the surgery).⁹

Regarding TYPE of pain, the classifications are nociceptive, neuropathic and psychogenic pain. The combination among them is considered mixed pain. Nociceptive pain is caused by the stimulation of nociceptors and can be classified as somatic and visceral. Somatic: superficial, highly innervated areas with a precise pin location (muscles, fascia, tendons, bones, skin), and Visceral: diffusely innervated organs with poor pain location. Neuropathic pain is produced after a nervous system injury, at any level of the neuroaxis. There could be a lesion in the periphery caused by a direct injury to the peripheral nerves, causing a section to compress, stretch or entrap and inflame at a central nervous system level. In the case of psychogenic, pain there is no organic base cause which could explain the patient's pain.⁹

Postsurgical pain evaluation can be performed with the scales the physician is more familiarized with and thus more qualified to apply them, also taking into consideration the

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pathophysiology, duration, intensity and cause of pain to treat in order to decide which analgesic to administer. This analgesic could be multimodal.³

Regarding pain intensity, pain treatment is based on the World Health Organization (WHO) analgesic ladder. For mild pain, the patient uses a Visual Analogue Scale (VAS) of 1–4 and should be treated with nonsteroidal anti-inflammatory (NSAIDs) medications and paracetamol. For moderate pain a VAS of 5–7 is used, and is treated with first grade medications, adding minor opioids. For severe pain a VAS of 8–10 is used, with the addition of major opioids.⁹ The treatment should also consider when there is a combination of neuropathic and nociceptive pains, the use of adjuvants such as neuromodulators, and tri-cyclic antidepressants at any grade. Different locoregional analgesic techniques may be combined at any grade in order to reduce the analgesic requirements or potentiate the beneficial effects, producing a safer multimodal analgesic with fewer side effects. Thus, there will no longer be the need to reach maximum doses of analgesics, and their combination will reduce doses and potentiate the effect.⁷

Therefore, it is crucial to define what a major surgery is and what a minor surgery is, and where to position a laparoscopic cholecystectomy.

Minor surgery is the practice of therapeutic and/or diagnostic low-complexity surgical procedures. These procedures usually do not require postoperative monitoring, are ambulatory, of short duration and low risk, with no significant postsurgical complications expected, performed on superficial tissue and/or easily accessible structures, using low locoregional anesthesia, during which a general mild-intensity is produced.⁴ Major surgery is any surgical act including body cavity penetration (skull, thorax, abdomen or extensive surgery of limbs) which generally require hospitalization, of high complexity and strict hospital postoperative monitoring.⁴

However, a large amount of major surgeries do not involve an unavoidable hospitalization for more than a few hours. These surgeries are performed through procedures called ambulatory surgeries and are considered major ambulatory surgeries, where the surgical and anesthetic techniques are similar to those conventionally used, or are performed with more precision and image magnification *than* the operative field, with minor tissue manipulation and small wounds, thus resulting in a moderate metabolic and neuroendocrine responses, better recovery, a shorter hospital stay and early work incorporation, in addition to the esthetic benefits and a positive cost-benefit impact. These generally produce moderate to severe pain, which should be treated efficiently given the fact the patient goes home.⁴

Laparoscopic surgery for cholecystectomy is considered to be ambulatory major surgery or, in some cases, with a short hospital stay. Therefore, the objective is to reduce the trauma caused as much as possible so the patients may go home a few hours after the intervention. This involves an obligation on the part of the medical team to provide adequate postoperative pain control. Post-operative pain in this case represents an incidence of over 30%, making it one of the most relevant problems for patients, anesthesiologists and surgeons.⁵ When treating postoperative pain, we must remember anatomical physiological bases,² as well as pain

classification, for a more efficient treatment and a proper selection of analgesics.

Postoperative pain of laparoscopic cholecystectomy is considered to be acute, of moderate to severe intensity, with a somatic nociceptive component (abdominal wall) and visceral (the actual surgical site and manipulated adjacent visceral structures of the peritoneum). Thus, the analgesics of these procedures should start from this analysis.⁷

During the postoperative period, pain manifests itself with maximum intensity during the first 24 h, progressively reducing. Therefore, the onset of postoperative pain treatment requires a timely and efficient treatment, keeping in mind that it may extend to up to a week.^{2–8}

Transversus abdominal block TAP is indicated for postoperative analgesics in infra-umbilical laparotomy, abdominoplasty, C-sections, and some cases where the surgery involves the upper abdominal wall, such as a cholecystectomy.⁵ It is a technique for nociceptive and non-visceral pain.¹

In the study "US-TAP, an alternative in the management of postoperative pain in laparoscopic cholecystectomy" the objective was to use this analgesic technique and evaluate the efficacy of transversus abdominis plane block by ultrasound compared to the regular analgesic treatment at the hospital. They proved that "US TAP" is an effective technique; statistically significant compared to the standard of pain management used routinely in the hospital for laparoscopic cholecystectomy, the analgesia was similar in both groups and reduced rescue doses with tramadol in the group of the cases where US TAP blockage was performed. The rescues were solely focused on patients who presented severe pain; we did not consider moderate pain. It is important to stress the importance of specifying the moment, number and doses applied to the patient and the compared analgesic techniques, preferably with the same analgesic strength, thus making the comparison more significant.

US-TAP is a postoperative analgesic alternative and should be considered as a part of multimodal analgesia in upper and lower abdomen surgeries,¹ but never as a single postoperative analgesic technique. Laparoscopic cholecystectomy included, it is a technique which provides analgesia for nociceptive pain of the abdominal wall, and at least that part of pain would be solved by these methods.^{5–10} Without forgetting that visceral pain caused by the intraabdominal surgical procedure, which should be treated with a combination of analgesics for moderate to severe pain, such as inflammatory drugs and minor opioids at low doses, and paracetamol, in order to completely cover pain treatment. The level of approach of US-TAP should be specified, since the level of entry point varies with the type of surgery, specifying the puncture site and infiltration of the local anesthetic for a greater analgesic extension (subcostal, posterior or if performed infraumbilically).⁶ The volumes are more important than the concentration in these wall blockages, since they are analgesic and non-anesthetics. High volumes of 25–30 ml will give a more relevant analgesic control, due to the more extensive anesthetic in the nervous terminals of the wall.^{5,6}

In conclusion, laparoscopic cholecystectomy is an ambulatory procedure, and postoperative pain should be treated not only immediately during the first 6 h, but it must cover at least the first 24–72 h, and up to a week in some cases,

of more complex surgeries.^{6,8} It ought to include a gradual reduction of dosage, as the pain decreases progressively.

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