



Painless surgery and long-term quality of life

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In the February issue of the *Journal of the Chinese Medical Association*, Dr. Tai et al¹ published a very useful article entitled 'An investigation of the effect of patient-controlled analgesia on long-term quality of life after major surgery: A prospective cohort study,' which addressed a very important but often under-weighted issue: chronic postoperative pain and quality of life (QOL) after major surgery. The authors performed a prospective longitudinal study to evaluate the effects of immediate postoperative patient-controlled analgesia (PCA) on the postoperative one-year QOL. It is relatively surprising to find that the use of intravenous PCA during operation was associated with a better QOL postoperatively in physical health.¹ Since chronic pain after major surgery is still a heavy economic and health-care burden, any prevention strategy is encouraged.²⁻⁴ The authors' contribution to the identification of certain causes associated with chronic postoperative pain (QOL) is worthy of applause.

At first, the real pathophysiology of chronic postoperative pain is still unclear. It is believed that chronic postoperative pain may be an end product mediated by both physical and psychological injuries. The sequelae of physical trauma during major surgery can be easily identified by surgery-related nerve injury, adhesion, scarring, and continuous inflammatory process.^{5,6} Furthermore, the surgical wound, and its approach method (exploratory laparotomy or minimally invasive surgery [laparoscopy as an example]), surgical technique and the use of surgical instruments or materials, such as coagulation system or electric power-mediated incision system (resultant burn-like injury of the incision wound and surrounding tissue) and the use of some un-absorbable material (mesh as an example, with resultant irritation and exposure), and additionally, immediate and/or subsequent operation-related complications, such as unexpected surgery-related procedures, hollow-organ perforation, and wound infection, are associated with the immediate operative injury, postoperative recovery, and long-term sequelae, as well as long-term postoperative QOL.⁷⁻¹¹ However, in the current study, the authors did not mention this part.

Second, it is very clear that the authors have listed all major operations in the current study in Supplementary Appendix 1 (<http://links.lww.com/JCMA/A44>). However, the targeted organs for major surgery are dramatically different, which is also not even distribution among three groups. Although it is uncertain whether surgery sites might be associated with higher risk of postoperative chronic pain, and it is also hard to know which types of surgeries might involve much more psychological change, we believe both issues are important for the subsequent development of postoperative chronic pain. In fact, one review showed half of patients undergoing leg amputations, breast cancer surgery, and thoracotomy surgery might be complicated with chronic pain.² Furthermore, surgery involving sex-related organs or sex-specific characteristics might result in unpredictable psychological problems, with subsequent association with uncertain risk of altered postoperative QOL. In term of uterus or breast, evidence shows that some women believe that the uterus is a regulator and controller of important physiological function, a sexual organ, a sources of spirit and vitality, and a key component to maintain their youth and attractiveness, and of course, the concept is also strongly present in the consideration of breast, since loss of these organs might lose their female characteristics.^{12,13} Unfortunately, the authors failed to further analyze their data, making unknown distribution of specific surgery in three groups. However, based on the following findings: the median postoperative hospital stay was statistically significant shorter in patients without PCA treatment than those of the other two groups, either intravenous or epidural PCA group; the median pain score measured by visual analog scale in patients without PCA treatment was statistically significant less than those of the other two groups; and the female patients were predominant in no PCA group, and non-abdomen or non-thorax site surgeries were extremely higher in no PCA group, we believed breast surgery might be a contributing factor to be associated with lower QOL postoperatively in patients without PCA treatment. However, without the detailed information, it is difficult to test our hypothesis.

Recently, organ-preservation surgery is popular in certain and highly selected patients; however, the postoperative adjuvant therapy also significantly impairs the QOL of these subjects. In the current study, we also found there is a statistically significant difference of cancer adjuvant therapy among three groups. The types of cancer adjuvant therapy vary greatly, such as chemotherapy, immune therapy, targeted therapy, and hormone therapy, and all of them involve the significant impairment of QOL, which is not also harmful physiologically (direct trauma or indirect trauma) but also psychologically (cancer phobia, and economic burdens based on high expense of therapy and losing work ability).¹⁴⁻¹⁷ For example, hormone-related menopausal

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syndrome, genital-urinary tract problems or altered body features might bother women very much.

In conclusion, the transition from immediate acute postoperative pain to chronic postoperative pain is a highly challenge issue. The pathophysiology is much more complicated. Surgery themselves might also contribute the development of chronic pain. Although it is uncertain whether immediate patients themselves mediated pain control on the decreased long-term postoperative chronic pain can work or not, there is no doubt of importance and value of painless surgery by this approach (PCA) for the majority of the patients who need major surgery for their diseases.

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