

CASE WITH COMMENTARY

Is It Ethical to Treat Pain Differently in Children and Adults with Burns?

Commentary by Sharmila Dissanaïke, MD

Abstract

This commentary discusses ethical implications of the common practice of treating children's and adults' burn pain differently. Physicians have obligations to ensure that (1) their own discomfort with children's pain doesn't lead them to make pain management decisions that could place a patient at greater risk and (2) to engage in thoughtful, individualized pain management strategies. Long-term consequences of overzealous pain medication administration, for example, could include delayed recovery and integration or opioid dependence. The need to create individualized approaches to pain management, based on published guidelines, is discussed along with uses of nonpharmacological treatment for both adults and children.

Case

Asmin is a new fourth-year medical student rotating at Franz Hospital's burn and wound care unit for both adults and pediatric patients. The resident physician, Dr. Mason, arrives and Asmin presents the patients she had been following.

"Frankie is a nine-year-old girl who presented a few weeks ago with second-degree burns to her neck and face and 5% total body surface area (TBSA) third-degree burns to her chest following a cooking accident. She received a sheet graft, which was secured with dissolvable sutures. Frankie's vitals are now stable and she has been doing well overnight; complete blood count (CBC), basic metabolic panel (BMP), and other lab results are within normal limits. She has finished her course of antibiotics. Her dressings will be changed today and we can likely plan for discharge tomorrow."

Dr. Mason nods in affirmation and adds, "Be sure to call anesthesia for conscious sedation during the dressing change." Asmin makes a note and continues.

"Ms. Joplin is a 45-year-old woman who presented several weeks ago with 9% TBSA third-degree burns to her chest, breasts, and abdomen after falling into a fire in a friend's backyard fire pit. She received a mesh graft secured with staples. She had no issues overnight and is now in stable condition; she rates her pain as a 7 on a 10-point scale this morning. CBC, BMP, and other labs are within normal limits. She is due for a dressing

change and needs oral hydromorphone to manage her pain. We can consider discharge in the next few days if her condition remains stable. I assume we should call anesthesia for her dressing change, so I'll do so."

Dr. Mason says, however, "There is no need for conscious sedation for this lady. Give her some IV hydromorphone during the dressing change and see how she does on acetaminophen in the meantime."

Confused, Asmin asks, "Other than age, these patients seem pretty similar. Why is their pain management different? I guess it's not really so obvious, at least to me. If the sheet graft is more intensive and takes longer to perform, I guess it makes sense that she'd get different pain care. Please help me better understand why the strategies are different for patients whose injuries were so similar."

Dr. Mason considers Asmin's question, and responds, "We just tend to be more cautious with pediatric patients."

Commentary

This realistic case scenario is a practical demonstration of how physician perceptions, patients' nociception, and psychosocial and cultural constructs all coalesce in our approach to pain management in a clinical setting. While the approach described in this case is common, it is not ideal from a pain management perspective. This case highlights the need for a thoughtful, individualized approach to each patient based on sound scientific and ethical principles.

The resident physician Dr. Mason and medical student Asmin in this scenario are faced with the common challenge of developing a pain management regimen for procedural pain associated with dressing changes in two burn patients on their service. Based on the details presented in this case, and focusing purely on the biophysical dimension of nociception as a cause of pain, the adult patient Ms. Joplin is likely to suffer a stronger pain stimulus during her dressing change than the child Frankie. This is due to her having had a larger TBSA burn from the outset and to staples being used to secure the graft instead of absorbable sutures. The lack of adequate baseline pain control for Ms. Joplin, as described by Asmin, is another risk factor; failure to control baseline pain usually increases the difficulty of providing adequate analgesia for a subsequent procedural intervention.¹

Therefore, if one were only to consider the data regarding the burn injury, baseline pain, and operative treatment, it would be expected that the adult Ms. Joplin would require stronger analgesia and sedation than the child Frankie. However, Dr. Mason's initial contrary response is not far from conventional practices in many burn centers across the

country, where adult and pediatric pain are viewed and treated completely differently. Clearly, factors beyond the nociceptive process are being considered.

Differing Pain Management Approaches for Adults and Children

The vast majority of normal adults are instinctively moved by seeing or hearing a child in pain; this innate emotional response is likely to incline most clinicians to take additional steps to minimize the [pain and suffering of children](#). While clinicians are also concerned about their adult patients' pain, it may not "tug the heartstrings" in quite the same forceful manner. As adults, we have the cognitive capacity to understand why a painful procedure is necessary for our eventual well-being; this understanding might mitigate the discomfort that nurses and physicians feel at having to inflict short-term pain in adults for a longer-term benefit. Performing procedures in awake children can feel cruel, since children are unable to comprehend the reason for the procedure and the noble intent behind it; this increases the discomfort on the part of the physician and other health care practitioners, none of whom wish to be placed in this uncomfortable position. Thus a greater effort is often made to prevent children from feeling pain in many health care settings.^{2,3}

Several guidelines exist on pain control in burn patients^{4,5} and children.⁶ Interestingly, there is very little published work on pain control in children with burns as compared to adults and only one recent practice guideline for pediatric burn patients,⁷ thus leaving a knowledge gap in the optimal management of pediatric burn pain. Many burn specialists recommend the liberal use of nonpharmacologic pain control, especially in children, in addition to the standard opioid ladder and medications such as nonsteroidal anti-inflammatories and anticonvulsants.^{2-5,7} There is growing recognition that our perception of pain is influenced strongly by fear, anxiety, and lack of coping mechanisms^{8,9}; in children, the impact of these factors is usually greater than in adults, since they have not had as much time and experience to develop robust coping mechanisms such as [distraction](#) and rationalization.¹⁰ A multifaceted approach that recognizes and treats these associated factors in addition to the nociceptive pain is likely to be a more successful strategy that meets our expectations of ethical care than simply increasing the potency of analgesics based on clinicians' judgment of how much pain they would expect in a given situation based on their prior experience. While requesting anesthetic-grade sedation for all procedures in children is common in my experience and stems from the noble intention of protecting the child from hurt, this strategy may not be the most beneficial for the child in the long run. Reintegration of the child into the home and school environment is the eventual goal of burn care, and requiring heavy sedation for every dressing change might eventually delay the successful completion of inpatient treatment and leave the child and parents ill prepared for transition to the home.

Need for Individualized Pain Management Strategies

In the case presented, Dr. Mason's plan for the pain management of each patient during her dressing change appears to be based on habit and routine ("this is how we do things here") rather than a thoughtful, [individualized response](#) to each patient's situation. Unfortunately, based on my extensive experience in resident education and the anecdotes of other faculty members, such cognitive shortcuts are common, especially among trainees who are struggling to cope with increasing workloads (e.g., clerical and administrative tasks) in fewer work hours, a phenomenon known as work compression.¹¹ The human tendency to compartmentalize leads the physician to memorize a few narrowly defined pain management options that are successful in most cases, such as those mentioned in this case (i.e., IV hydromorphone and acetaminophen versus conscious sedation), and then to deploy these methods based on broad categories (adults versus children) rather than assess an individual patient's clinical situation, pain, and anxiety. Individualized medicine takes time, the one commodity in short supply for most modern physicians.

This case should also be viewed in the context of the dramatic shift in physician attitudes and public perceptions about [opioid prescription](#) over the past decade. The pendulum has swung wildly based on whether the short-term goal of maintaining a patient's pain at the lowest possible level or the long-term goal of preventing the devastating consequences of opioid addiction is emphasized.¹² Minimizing opioid use in favor of using other analgesics, as is the current trend, can have unintended adverse consequences that become apparent after several years, such as nephrotoxicity, gastrointestinal complications, and delayed wound healing from high-doses of nonsteroidal anti-inflammatory drugs.^{13,14}

In burn patients, the severity of pain usually necessitates the use of opioids, including long-acting potent agents such as methadone. In this case, both patients should have detailed assessments of baseline pain levels including median pain at rest and during activity, whether the pain (and the anxiety or other symptoms that might be related to acute stress disorder) is decreasing or increasing with time, and whether the pain restricts their ability to participate in therapy or sleep through the night. Based on their responses, an appropriate long-acting oral analgesic agent should be prescribed for baseline pain, which might include long-acting methadone or morphine or, more likely at this stage in their treatment, less potent opioids, opioid analogues, and nonsteroidal agents. The patients' procedural pain should then be closely assessed, including the timing of the symptoms, as acute pain at the very onset of dressing change is often related to anxiety and can be reduced by treatment with an oral anxiolytic an hour prior to removing the dressings. Pain during the entire procedure suggests the need for intravenous or transmucosal short-acting opioids (such as a fentanyl lollipop) that provide powerful immediate relief of pain without causing unwanted sedative effects long after the procedure is complete. Appropriate management of pain requires that we

frequently reevaluate the pain management method and aim to reduce the analgesic dose required (by using adjunctive therapies, for example) in order to allow the patient to continue to heal and regain function as comfortably as possible without incurring long-term dependence.

Conclusion

Regardless of whether the patient is an adult or a child, assessing the patient's pain needs thoroughly and systematically at the outset will allow the development of a comprehensive pain management plan that prevents these decisions from having to be made by covering or on-call physicians who might not have the time to devote to this endeavor and thus might be more likely to rely on shortcuts. Regular reassessment and readjustment of the plan by the multidisciplinary health care team, which should include nursing and pharmacology colleagues, and inclusion of nonpharmacologic adjuncts as the patient gets closer to discharge will hopefully prevent the type of practice inconsistency illustrated in this case scenario.

References

1. Mendoza A, Santoyo FL, Agulló A, Fenández-Cañamaque JL, Vivó C. The management of pain associated with wound care in severe burn patients in Spain. *Int J Burns Trauma*. 2016;6(1):1-10.
2. van der Heijden MJE, Jeekel J, Rode H, et al. Can live music therapy reduce distress and pain in children with burns after wound care procedures? A randomized controlled trial [published online ahead of print January 30, 2018]. *Burns*. doi:10.1016/j.burns.2017.12.013.
3. Arane K, Behboudi A, Goldman RD. Virtual reality for pain and anxiety management in children. *Can Fam Physician*. 2017;63(12):932-934.
4. Faucher L, Furukawa K. Practice guidelines for the management of pain. *J Burn Care Res*. 2006;27(5):659-668.
5. Gamst-Jensen H, Vedel PN, Lindberg-Larsen VO, Egerod I. Acute pain management in burn patients: appraisal and thematic analysis of four clinical guidelines. *Burns*. 2014;40(8):1463-1469.
6. Lee GY, Yamada J, Kyololo O, Shorkey A, Stevens B. Pediatric clinical practice guidelines for acute procedural pain: a systematic review. *Pediatrics*. 2014;133(3):500-515.
7. Pardesi O, Fuzaylov G. Pain management in pediatric burn patients: review of recent literature and future directions. *J Burn Care Res*. 2017;38(6):335-347.
8. Marshall PWM, Schabrun S, Knox MF. Physical activity and the mediating effect of fear, depression, anxiety, and catastrophizing on pain related disability in people with chronic low back pain. *PLoS One*. 2017;12(7):e0180788. doi:10.1371/journal.pone.0180788.
9. Dodo N, Hashimoto R. The effect of anxiety sensitivity on psychological and biological variables during the cold pressor test. *Auton Neurosci*. 2017;205:72-76.

10. National Scientific Council on the Developing Child. Supportive relationships and active skill-building strengthen the foundations of resilience. <https://developingchild.harvard.edu/resources/supportive-relationships-and-active-skill-building-strengthen-the-foundations-of-resilience/>. Published 2015. Accessed April 30, 2018.
11. Ludmerer KM. Redesigning residency education—moving beyond work hours. *N Engl J Med*. 2010;362(14):1337-1338.
12. deShazo R, Johnson M, Eriator I, Rodenmeyer K. Backstories on the US opioid epidemic: good intentions gone bad, an industry gone rogue and watch dogs gone to sleep [published online ahead of print January 31, 2018]. *Am J Med*. doi:10.1016/j.amjmed.2017.12.045.
13. Huang Y, Tang SR, Young CJ. Nonsteroidal anti-inflammatory drugs and anastomotic dehiscence after colorectal surgery: a meta-analysis [published online ahead of print November 22, 2017]. *ANZ J Surg*. doi:10.1111/ans.14322.
14. Harirforoosh S, Jamali F. Renal adverse effects of nonsteroidal anti-inflammatory drugs. *Expert Opin Drug Saf*. 2009;8(6):669-681.

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ISSN 2376-6980**