

Multiple Single-Injection Spinals for Bromelain Based Enzymatic Burn Debridement

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Introduction	Case Description	Discussion
● Bromelain-based enzymatic debridement is a novel method for debridement of deep dermal / full thickness burns derived from pineapple plant stem extract ¹ ● Pain management during treatment can be a challenge secondary to the severity of pain and length of the procedures ^{2,3} ● A consideration for regional anesthesia is the percentage of total body surface area (TBSA) burned and location of the burn ^{2,3} ● Catheters should not be placed through burned skin or eschar, but single-injection spinal anesthesia and nerve blocks can safely be performed through burned skin ^{2,3} ● In cases where neuraxial is utilized and a catheter is contraindicated, the duration of sensory blockade may not be sufficient for the entirety of the procedure ^{2,3} ● Repeated spinal anesthesia, which has been performed safely in other patient populations, can be considered ⁴	● A 24-year-old male with no significant past medical history presented with 21.5% TBSA scald burn to the back and bilateral lower extremities, scheduled for bromelain-based debridement of his lower extremities in the ICU ● The patient had a second degree burn overlying the lumbar spine (figure 1), precluding the placement of combined spinal-epidural (CSE) ● Single-injection spinal anesthesia was administered using 13 mg of isobaric bupivacaine 0.5% and 200 mcg of epinephrine at the L4-L5 interspace ● The patient tolerated the initial part of the procedure; however, during the debridement period, the patient experienced decreased motor and sensory blockade ● After careful neuromotor examination, the decision was made to administer a second dose of spinal anesthesia approximately 6 hours later, with 11 mg of isobaric bupivacaine 0.5% and 100 mcg of epinephrine ● The patient tolerated repeat spinal anesthesia without complications and was pain-free for the remaining duration of the procedure  ASRA Abstract and References	● Regional anesthesia is optimal for bromelain-based debridement to be performed bedside ³ ● Due to the length of the procedure, epidural catheters and peripheral nerve catheters are preferred, but overlying burned skin or eschar pose a challenge ● Few studies have evaluated the safety of multiple spinal anesthetics ^{4,5}; with repeated intrathecal administration of local anesthetic, there is concern for high spinal, bradycardia, hypotension, and neurological sequelae. ● This case highlights the safety and efficacy of repeated spinal anesthesia for bromelain-based enzymatic debridement ● There were no complications from the repeated spinal anesthetics in this case, and this remains a viable option not only in bromelain-based enzymatic debridement, but for patients undergoing similar procedures with a contraindication to catheter placement