Case Report

Postoperative Hemorrhage After Lidocaine–Epinephrine Field Block in Cutaneous Surgery: A Letter to the Editor

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Abstract

Introduction: Epinephrine is used in field block anesthesia for cutaneous surgery to enhance the effect of lidocaine and reduce its systemic effects. It has been hypothesized that the use of epinephrine increases the risk for postoperative hemorrhage in cutaneous surgery. **Case:** An elderly male was seen in the clinic for excision of a basal cell carcinoma (BCC) in the right upper trapezius area. A field block was performed by injecting lidocaine 1% with epinephrine 1:200,000 (3 mL) circumferentially around the margins of the excision. Adequate hemostasis was achieved during the procedure and the wound was closed without complication. Approximately 45 min post-excision, the patient returned with profuse active bleeding from the wound. The sutures were removed, and an active arterial bleed was identified. The artery was tied off on the lateral side of the wound to achieve hemostasis. **Conclusion:** A wearing-off effect of epinephrine may increase the risk for postoperative hemorrhage in cutaneous surgery, wherein an intraoperative arterial nick, masked by localized vasoconstriction, is revealed by a relative postoperative vasodilation. Practitioners should be aware of this potential complication.

Keywords: Lidocaine–epinephrine, anesthesia, hemorrhage

Since as early as 1968, it has been theorized that localized vasoconstrictor use, as in lidocaine–epinephrine field block, can increase the risk of postoperative bleeding.[1,2] However, this relationship has not been extensively studied and remains controversial due to conflicting evidence. We present a case of postoperative bleeding after outpatient excision of a basal cell carcinoma (BCC) that we hypothesize to be due to a potential wearing-off effect of epinephrine in field-block anesthesia.

In the present case, an elderly male on aspirin 81 mg once daily was seen in our dermatology clinic for the excision of a BCC measuring 10 mm×6 mm in the right upper trapezius area. A field block was performed by injecting lidocaine 1% with epinephrine 1:200,000 (3 mL) circumferentially around the margins of the excision. The lesion was excised with 4 mm-margins down to subcutaneous fat using a #15-blade scalpel in a fusiform fashion. Closure length was 3 cm×5 mm. Overall, limited intraoperative bleeding was identified. Detailed wound care and postoperative instructions were given to the patient to prevent postoperative complications. The patient tolerated the procedure well and left the office in good condition. Approximately 45 min after the excision, the patient returned with profuse active bleeding from the wound. The patient claimed he had not moved his upper extremity or neck in excess to cause a postoperative bleed. Upon removal of the dressing, an active arterial bleed was identified from the lateral margin of the wound bed. A subcutaneous artery was tied off with 4-0 vicryl suture, electrocautery to the artery was applied, and hemostasis was achieved. The BCC excision, dressing, and post-excision counseling performed in our case were completed in 1 h, with our patient returning 45 min after discharge. The patient verbally consented to publication of this report.

Epinephrine is used as an adjunct during cutaneous surgery because it prolongs the activity of lidocaine, decreases the volume of lidocaine required to achieve anesthesia,

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and reduces systemic side-effects of lidocaine. Each of these desirable factors is due primarily to the effect of epinephrine to cause localized vasoconstriction. However, the localized vasoconstrictive effects of epinephrine wear off within 30 min after subcutaneous administration.[3] As a result, it is reasonable to postulate that a wearing-off effect of epinephrine (relative vasodilation of previously nicked arteries) may contribute to postoperative bleeding within 30 min to 1 h of application.

The benefits of epinephrine in cutaneous field block far outweigh potential complications. Although the wearing-off effect in cutaneous surgery has been theorized,[1,2] it remains controversial. For instance, one study on tumescent infiltration in ambulatory phlebectomy reported a reduced, rather than increased, rate of hematoma formation with the addition of epinephrine to localized anesthetic.[4] In contrast, Jones and Grover[5] reported the risk of postoperative hematoma following cervicofacial rhytidectomy to be significantly greater in those patients who received localized anesthetic with epinephrine when compared with those who received the same anesthetic without epinephrine. This seemingly dichotomous effect of epinephrine use for cutaneous surgery, along with a general paucity of current evidence supporting either narrative, warrants further study.

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Conflicts of interest

The authors have no conflict of interest to report.

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