Delayed reaction to fibrin sealant after facelift surgery: A case report and literature review.

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Abstract:

Fibrin sealants are commonly used in facelift surgery to diminish postoperative ecchymosis and edema, and to support soft tissues during healing.1 Fibrin sealants are two-component systems consisting of fibrinogen and thrombin with aprotinin as a fibrin-clot stabilizer, which potentially could lead to adverse reactions due to its bovine origin.2 This case report is about a patient undergoing facelift surgery in which fibrin sealant was used followed by a type-IV allergic reaction to the sealant. A literature review was also performed using the electronic database, Pubmed, and entering keywords such as fibrin tissue sealant, fibrin glue, allergy, adverse reaction, face-lift, and rhytidectomy. A 55-year-old Caucasian female presented to an affiliatecosmetic surgical center for evaluation and improvement of moderate facial and neck skin laxity. Patient described a history of asthma, rosacea, angioedema, vertigo, migraine headaches, and arthritis. Medications taken by the patient were amitriptyline, Aleve, Epipen, meclizine, promethazine, minocycline, hydroquinone, and cyclobenzaprine. She noted an allergy reaction to penicillin and Neosporin, as well as to certain fabrics. Patient revealed a surgical history of anterior cervical fusion in 1988 and tonsillectomy in 1960. Patient denied any general anesthetic complications during and after both surgeries. The patient underwent a facelift procedure with upper and lower blepharoplasty. The facelift procedure involved extensive pre- and posterior-auricular undermining with submental platysmalplasty. Fibrin sealant was applied at the end of the facelift procedure prior to closure. No complications were encountered before, during, and after surgery. The patient had uneventful follow-ups at post-op day one and five. At 4 weeks, patient presented with mild swelling below the chin not extending past the

hyoid bone. She denied fevers or chills and was maintaining her own airway without any distress. Upon physical examination, there was firm but fluctuant edema with urticaria and erythema along the submental region without tenderness to palpation. Lymphadenopathy was also present. No other signs of urticaria, edema, and erythema noted elsewhere on the face or torso. Submental aspirate collections revealed 1.5mL of pink, clear fluid, which flattened the submental region. Aspirate was sent for cultures, and the patient was prescribed antibiotics and a steroid dose-pack. At 6 weeks, surgical exploration was performed via submental incision and midline platysma-plication sutures were removed. Initial thought was that the patient experienced an allergic reaction to the silk suture. Surgical exploration was uneventful which noted no obvious granulation formations, except for thin, serous fluid. A biopsy was performed and submitted for pathology. Cultures and gram stain were negative, and the patient appeared to respond well to the steroid dose-pack. Pathology reported chronic inflammatory infiltrates. Over the next 6 months, erythema and swelling were evident but gradually subsided while surgical incisions healed well. Patient's symptoms eventually resolved completely without any further events. Type-I reactions to aprotinin are well documented in the literature. It is important to note that reactions related to aprotinin use involved mostly intravascular administration and a previous history of exposure.3 Other case reports describe anaphylactic reactions to fibrin sealants after topical application.4 On this patient, fibrin sealant was applied topically, but the symptoms clinically resembled a delayed hypersensitivity reaction. This is the first recorded incident of a type-IV hypersensitivity to fibrin sealant use in facelift surgery.