A Simple Technique for the Treatment of Adhesive Injuries to the Eyelids

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Background:

- Cyanoacrylate adhesive, commonly known as superglue, is a widely available adhesive commonly found in households. It is a monomer of cyanoacetate and formaldehyde which polymerizes within seconds on dry surfaces, such as eyelid margins.

- The incidence of ocular injury due to cyanoacrylate adhesive is not known and varies widely from a described 53 cases (25% of which were children) reported in the literature in the preceding 30 years up to the time of publication of Reddy, 2012 as compared to a reported 105 cases in just a 3 month time period at Farabi Eye Hospital.

- Management strategies in the literature range from observation, to attempted manual forceful opening, to chemical dissolution (for example, with acetone), to the administration of general anesthesia followed by lash trimming in the operating room.
Purpose:

- To describe a simple technique to release eyelid adhesions due to cyanoacrylate or other adhesive agents that can be successfully performed at bedside without sedation.
Method:

A. Carefully examine the eyelids and manually apply opposite vector forces along the eyelid margin to identify any opening in the lid fissure.

B. Instill a drop of topical anesthetic through the opening in the lid fissure.

C. Insert the blunt end of a Jameson muscle through the identified opening and rotate the hook so that the distal element of the hook is normal to the surface of the eye.

D. Pull the hook parallel to the lid margins and through the site of the eyelid adhesion. Counter pressure in the opposite direction of the muscle hook can be applied with the fellow hand.

E. Reexamine the eyelids to ensure all adhesions sites are cleaved and the eye is fully opened. Residual glue from the eyelashes or around the eyelid can be carefully trimmed with blunt-tip scissors.

Figure 1: Illustration demonstrating technique to relieve eyelid adhesions.
Figure 2:

A. Child with adhesion of right upper and lower eyelids secondary to accidental cyanoacrylate application.

B. Placement of Jameson muscle hook being pulled parallel to lid margin to relieve adhesion.

C. Child with relief of eyelid adhesion after executing the technique described above.
Results:

- This technique may have several advantages over others described, including ease and simplicity, avoidance of caustic agents (i.e. acetone) adjacent to the ocular surface, and the absence of a requirement for general anesthesia in pediatric cases.

- This technique has been used in our resident ophthalmology clinic, hospitals and emergency departments for over 10 years without complications and has been successful in releasing all cases of chemical adhesion-induced tarsorrhaphy.
Conclusion:

- A muscle hook may be used to safely and successfully relieve eyelid adhesions due to the inadvertent application of cyanoacrylate glue in emergency departments without the use of general anesthesia.
References: