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Corneal Abrasion Associated with Eyelash Extensions During General Anesthesia: A Case Report

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Abstract

Corneal abrasion is the most common ophthalmologic complication after general anesthesia. It is painful and might delay hospital discharge. Removal of eyelash extensions is not involved in the preoperative questionnaire currently. We report a young woman with eyelash extensions who underwent laparoscopic surgery under general anesthesia developed corneal abrasions perioperatively. In previous case reports, common adverse effects of eyelash extensions include keratoconjunctivitis, allergic blepharitis, and dry eyes. This is the first case report about corneal abrasion related to eyelash extensions. In the future, inclusion of eyelash extensions removal in peri-operative checklists must be considered.

Introduction

Corneal abrasion is the most common ophthalmologic complication [1], which is painful and unexpected in most of cases. Most of the ocular injuries get recovery but sometimes result in visual impairment. To identify risk factors associated with the development of corneal abrasions is important for the preventive practice.

Eyelash extensions are a common beauty treatment in which individual synthetic extension fibers are applied, lash by lash, to natural eyelashes [2]. This beauty treatment is gaining popularity among women. Herein, we report a young woman wearing eyelash extensions underwent a laparoscopic surgery under general anesthesia. She developed perioperative corneal abrasions and had a prolonged length of hospital stay.

Case Description

A 39-year-old woman (158 cm, 59 kg) did not volunteer her eyelash extensions. Before the induction of general anesthesia, the anesthesiologists noticed that approximately one third of her eyelash extension fibers have fallen out and confirmed that no one asked and identified eyelash extensions at the preoperative visit and check-up. To prevent the damage of her eyelash extensions and eyes, we applied a small piece of sterile dry gauze over the eyelids instead of usual eye ointment and Opsite [3]. In a head-down lithotomy position, she underwent laparoscopic ovarian cystectomy and myomectomy with blood loss 150 ml. She received crystalloid fluids 1800 ml and had urine output 500 ml during the 3.5-hour surgery. The surgery was completed uneventfully.

In the Post-Anesthesia Care Unit, she complained of left eye pain and could not open her eyes. Moderate to severe left corneal swelling and very mild right corneal swelling were noted. Diuretics were prescribed initially,

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but her eye condition did not improve after a urine output of 800 mL. Corneal abrasion caused by the fallen-out eyelash extension fibers was suspected. Her pain score seemed to improve temporarily after distilled water irrigation although no fallen-out fibers were found. However, the ocular symptoms recurred. An ophthalmologist was consulted, and corneal abrasions in both eyes with dry eye were diagnosed. Despite gradual improvement after patching and eye drops treatment, she had a prolonged length of hospital stay. After discharging, she was followed at the ophthalmology outpatient department, and there were no ocular symptoms, except for dry eye, which she did not have prior to having eyelash extensions.

Discussion

Reported adverse effects of eyelash extensions include keratoconjunctivitis, allergic blepharitis, dry eyes, burning sensations, lid swelling, pain, redness [2,4], and ignition of eyelash extensions related to ocular surgery [5]. Keratoconjunctivitis and allergic blepharitis are the most common complications of eyelash extensions. This is the first case reporting a young female with corneal abrasions related to eyelash extension fibers under general anesthesia.

In patients undergoing general anesthesia, corneal abrasions are the most common corneal complication with a reported incidence from 0.04% to 0.13% [6]. During general anesthesia, proposed risk factors for corneal abrasion include older age, long surgery, lateral positioning, head or neck surgery, corneal dryness, corneal exposure, mechanical trauma, and raised intraocular pressure secondary to prolonged head-down positioning [1,7,8]. However, some risk factors in the present case are different from the previous reports. According to the specific features of eyelash extensions, general anesthesia and surgical positioning, some explanations were proposed for this case. First, a tear film composed with lipid, aqueous, and mucin layers maintains corneal transparency and smoothness [9]. However, longer lashes in this case led to dry eyes preoperatively through a fan effect which increases the amount of air flow to the ocular surface with every blink [4]. The reduction of the protective tear barrier for corneal epithelium increased the risk of epithelial defect or corneal abrasion during surgery. Second, people wink, tear and weep naturally while tiny foreign bodies drop in eyes in general condition. These reflex reactions are inhibited by general anesthesia. Third, lagophthalmos (incomplete eyelid closure) during general anesthesia may further worsen the dry eye condition. Furthermore, increased corneal exposure to fallen-out eyelashes or fibers is a possible mechanical consequence of lagophthalmos during general anesthesia [4]. Fourth, gravitational changes, aggressive fluid replacement and jugular venous distension from prolonged head-down positioning can result in corneal edema. However, right eye symptoms are generally prominent due to higher outflow in the right internal jugular vein anatomically in the majority of people [10]. Taken together, corneal dryness, abrasion and edema, in particular left eye might be resulted from these mechanisms.

Patients with eyelash extensions are at greater risk of perioperative corneal abrasion. It is important for anesthesiologists to be aware of the potential risks, complications and adverse effects of eyelash extensions in patients undergoing general anesthesia. Patients are asked for removing gel nail, contact lens or jewelry and attend without any make up before surgery. However, removal of eyelash extensions is not included as a preoperative check-up currently. It is critical to consider the need for the inclusion of eyelash extensions removal in preoperative questionnaires and checklists, as highlighted by this case report.

Author Contributions:

Kuei-Fen Wang: This author helped complete this manuscript.

Li-Kai Wang: This author helped complete this manuscript.

Chun-Ning Ho: This author helped complete this manuscript.

Kuo-Mao Lan: This author helped complete this manuscript.

This manuscript was handled by Jen-Yin, Chen.

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