

中图分类号: R969.3 文献标志码: A 文章编号: 1006-4931(2025)06-0120-04
doi:10.3969/j.issn.1006-4931.2025.06.025



1 例牛角瓜乳胶入眼的病例报告及分析*

谢继青, 张旋[△], 马晓雯, 赵祥宇

(中国人民解放军联勤保障部队第九六〇医院, 山东 济南 250031)

摘要:目的 为牛角瓜乳胶入眼的治疗提供参考。方法 回顾1例牛角瓜乳胶入眼患者的临床诊疗过程, 结合国内外文献, 探讨该异物入眼的应对方案。结果 患者砍割牛角瓜植株过程中左眼不慎溅入牛角瓜乳胶, 清水冲洗后发涩, 并加重, 伴视力模糊, 疼痛7级, 于医院就诊, 予生理盐水冲洗眼睛, 以及左氧氟沙星、普拉洛芬、阿昔洛韦滴眼液和氧氟沙星眼膏24 h后症状加重, 后予50%葡萄糖溶液7.5 mL和10%葡萄糖溶液12.5 mL配成的混合液冲洗, 1周后各种症状消失, 1个月 after 视力恢复。结论 牛角瓜乳胶有很大药用价值, 处理过程中应注意物理防护, 如不慎入眼, 应遵循眼入异物诊疗的“4S原则”, 及时用高渗葡萄糖溶液冲洗, 辅以滴眼液或局部使用皮质类固醇液体消炎, 保障患者临床用药安全。

关键词:牛角瓜乳胶; 异物入眼; 药学监护; 文献分析

Case Report and Analysis of Ocular Exposure to *Calotropis gigantea* Latex

XIE Jiqing, ZHANG Xuan, MA Xiaowen, ZHAO Xiangyu

(The 960th Hospital of PLA, Jinan, Shandong, China 250031)

Abstract: Objective To provide a reference for the treatment of ocular exposure to *Calotropis gigantea* latex. **Methods** The clinical diagnosis and treatment process of a patient with *Calotropis gigantea* latex exposure to the eye was reviewed, and relevant domestic and international literature was analyzed to explore response strategies. **Results** The patient accidentally splashed *Calotropis gigantea* latex into the left eye while cutting the plant. After rinsing with clean water, the discomfort worsened,

*基金项目: 山东省自然科学基金[ZR2020QH349]。

第一作者: 谢继青, 女, 硕士研究生, 主任药师, 研究方向为药事管理及临床药学, 静脉用药安全配置, (电子信箱)0531jjzy@163.com。

[△]通信作者: 张旋, 女, 大学本科, 副主任护师, 研究方向为护理质量管理及神经内科护理, (电子信箱)13864082457@163.com。

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(收稿日期: 2024-03-06; 修回日期: 2024-11-26)

accompanied by blurred vision and a pain level of seven. The patient visited the hospital and received saline eye irrigation, along with levofloxacin, pranoprofen eye drops, and ofloxacin eye ointment. However, symptoms worsened after 24 hours. The patient was subsequently treated with an irrigation solution composed of 7.5 mL of 50% glucose solution and 12.5 mL of 10% glucose solution. One week later, all symptoms disappeared, and vision recovered after one month. **Conclusion** *Calotropis gigantea* latex has significant medicinal value, but proper physical protection should be taken during handling. If accidental eye exposure occurs, the "4S principle" for foreign body ocular treatment should be followed, with immediate irrigation using hypertonic glucose solution, supplemented by eye drops or topical corticosteroid solutions for inflammation control to ensure medication safety for patients.

Key words: *Calotropis gigantea* latex; foreign body in the eye; pharmaceutical care; literature review

牛角瓜别名断肠草^[1],系属萝藦科(Asclepiadaceae)植物,共约6种,在非洲和亚洲热带、亚热带地区均有分布^[2],地上部分和乳胶可外用治疗各种疣及皮癣。但其毒性较强,不可内服,需注意使用安全及异物误入人体后的应急处理。本研究中回顾了1例牛角瓜乳胶入眼的案例报告,并结合文献分析,给予药学监护,为以后相似病例的处理提供参考。现报道如下。

1 病例简介

患者,男,30岁,2023年3月6日上午9时,在马里执行维和任务时,砍割牛角瓜植株过程中左眼不慎溅入牛角瓜乳胶,立即用清水冲洗,仍发涩,20 min后加重,伴流泪、疼痛、角膜发红,持续5~6 h,午休后发现视力模糊,疼痛7级,随即到维和医疗分队二级医院就诊,医师体格检查发现左眼结膜充血,有白色雾状物遮挡瞳孔,视力右眼基本正常(5.0),左眼明显减弱(4.0)。迅速用生理盐水冲洗左眼,随后使用左氧氟沙星滴眼液、普拉洛芬滴眼液(均每日3次)及阿昔洛韦滴眼液(每4 h 1次),并予氧氟沙星眼膏(每日1次)。3月7日早上,患者左眼肿胀睁不开,到二级医院复诊,鉴于用生理盐水冲洗效果欠佳,医师考虑当地居民相关经验和药师建议,改用50%葡萄糖溶液7.5 mL和10%葡萄糖溶液12.5 mL配成的混合液冲洗眼睛,每次1~2 mL,冲洗后不适感明显减轻。3月8日复诊,感觉左眼疼痛明显好转,遮挡瞳孔的白色雾状物变薄、范围缩小,复查视力,左眼回升至4.6,继续用新配上述混合液冲洗,回营地后,每2 h冲洗1次,并辅以上述滴眼液消炎,用后眼睛充血慢慢减轻,雾状物继续变薄、缩小,畏光、流眼泪的情况慢慢改善。约1周后,各种症状逐渐消失;约1个月后,视力恢复至右眼5.1,左眼5.1。

2 文献分析

2.1 国内文献

检索中国知网、万方数据库自建库起至2024年1月31日信息,以“异物”为主题词检索,提取与眼睛相关文献3篇^[3-5]。肖爽^[3]认为,如是灰沙类异物入眼,应先闭眼,待异物刺激引起分泌的大量泪液自动冲洗异物;如是麦芒等易折断的尖锐异物嵌入组织内,取出时应多加小心,勿使折断;如疑有异物进入眼球内或嵌入

虹膜时,切不可冲洗,应立即到医院诊治;如有酸、碱等化学物质入眼,则应极大重视,视情况及时处理。石瑶瑶等^[4]曾报道1例眼内异物引起继发性青光眼和视网膜静脉炎案例,江睿^[5]据此案例结合经验总结出眼入异物诊疗的“4S原则”,包括眼内异物存留的征象(Sign),努力看到异物(See)、异物定位(Site)及手术(Surgery)。通过上述步骤,及时发现并处理眼内异物,以尽可能保留患者视力功能,避免异物引起并发症。该患者为维和军人,平时体健。异物入眼后,眼睛有薄雾状遮挡,但眼底检查无损伤,因此,应考虑以眼睛冲洗及按时滴消炎滴眼液为主。

2.2 国外文献

检索PubMed数据库自建库起至2024年1月31日信息,发现在沙特阿拉伯,GHADEER等^[6]报道了1例74岁老人自行涂抹牛角瓜乳胶后,眼睛出现无痛性视力下降,伴有弥漫性角膜水肿,镜面显微镜检查显示内皮细胞计数减少。该患者在牛角瓜乳胶入眼3 d后就诊,开始外用醋酸泼尼松龙1%,每天4次,持续第1周,之后逐渐减量。此外,在前2周内,每天3次局部使用环喷托酯(1%)滴剂。本案例患者冲洗时使葡萄糖混合液,主要依据民间偏方及当时实际情况配制,用葡萄糖溶液冲洗效果优于盐水,分析原因考虑是与牛角瓜乳胶的物理化学成分有关,也可能与葡萄糖的结构及混合溶液偏酸性及高渗特性有关。由于当时情况紧急,最终确定的是用糖水冲洗比盐水效果好,至于配比和浓度未进行梯度试验和比较,因此,本案例只是为牛角瓜乳胶入眼的治疗提供另一种可行性治疗方案。是否为最佳方案和配比,还有待于进一步研究。

GHADEER等^[6]还对该植物引起的眼部损伤原因进行了分析:1)毒性原因,由于乳胶本身中含有几种被认为有毒的生物碱(如钙调素、卡托毒素、钙西林、巨人素)^[7-8],而牛角瓜主要成分见表1(表中-为无,+为有)^[6],暴露于乳胶会刺激黏膜,并在动物模型中局部注射时产生接触性皮炎和剧烈炎症^[9]。2)机械性原因,由于乳胶渗入角膜内皮,患者出现了短暂的角膜水肿和内皮细胞永久性损失,从而出现无痛性视力下降。而本例患者自感疼痛难忍,推测可能与牛角瓜乳胶入眼的

表 1 牛角瓜成分分析

Tab. 1 Analysis of Calotropis gigantea components

化学成分	油醚提取物	甲醇提取物	化学成分	油醚提取物	甲醇提取物
生物碱	-	-	单宁和酚类	-	+
碳水化合物	-	+	皂素	-	-
还原糖	-	-	蛋白质和氨基酸	+	+
黄酮类化合物	-	+	脂肪和油	-	-
配糖体	+	+	三萜类化合物和萜固醇	+	+

量及患者感觉的敏感程度有关。

研究表明,牛角瓜乳胶有抗炎^[10-12]、抑菌^[12-13]、抗病毒^[14]、抗真菌^[15]、抗疟^[16-17]作用,以及胃肠保护^[18-19]、促进伤口愈合^[20-21]、强心作用^[22],还有抗氧化及抗糖尿病^[23-24]等多种药理活性,相信随着对牛角瓜乳胶研究的深入,牛角瓜属植物资源会得到更广泛的应用,开发出更大的药用价值。

3 监护建议

建议研究者在操作或接触牛角瓜乳胶时,注意戴好手套、戴护目镜,及时洗手,避免揉眼,做好物理防护,减少意外伤害。牛角瓜乳胶溅入眼睛的意外时有发生,其入眼属异物刺激,尽快用葡萄糖高渗的混合液冲洗(可参考文中比例),加用消炎滴眼液,或局部使用皮质类固醇消炎效果为佳。对于各种异物入眼,要参照“4S原则”,及时发现并处理眼内异物,以尽可能保留患者视力功能,避免异物引起并发症。滴眼剂要按正常用法用量使用,特殊人群如老人、儿童用药时,需更加谨慎,严格按照药品说明书上适应证和用法用量给药。

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