Indian Journal of Clinical Practice, Vol. 31, No. 5, October 2020

Accidental Instillation of Superglue in External Ear: A Unique Foreign Body

RUPENDER K RANGA*, SPS YADAV†, PRIYA MALIK‡, AYESHA GOYAL#

ABSTRACT

Foreign bodies in the ear are not an uncommon clinical entity; however, we hereby report a unique case of cyanoacrylate glue or superglue, accidentally instilled by a child into the external auditory canal of a young adult. Complete removal of the glue manually under microscope while preserving the normal anatomy of the ear canal and tympanic membrane is described.

Keywords: Superglue, cyanoacrylate, foreign body, external ear canal

Numerous types of foreign bodies are usually encountered in the external auditory canal (EAC) in day-to-day otological practice. Superglue or cyanoacrylate glue is an excellent bonding agent, which can even bind with the skin and when tried to be removed from EAC, could cause undesirable symptoms like pain, bleeding, mucosal irritation, conductive hearing loss, anxiety and injury to the tympanic membrane. Removal of the cyanoacrylate glue from the EAC and tympanic membrane, without damaging it, is a real challenge. This case highlights one such situation, wherein superglue got accidentally instilled into the EAC and was removed successfully without any damage to the underlying skin and the tympanic membrane under local anesthesia.

CASE REPORT

A 21-year-old male presented to the otology clinic with history of instillation of superglue into his right ear by his 5-year-old nephew, while he was sleeping. He presented to the clinic within 6 hours of instillation along with glue tube. He complained of slight itching and blockage on affected side. The patient denied any history of pain, bleeding, discharge and hearing loss. Upon microscopic examination, affected side revealed a hard glistening white substance filling the right EAC, slightly adherent to it and occluding the view of tympanic membrane (Fig. 1). Patient was taken up for

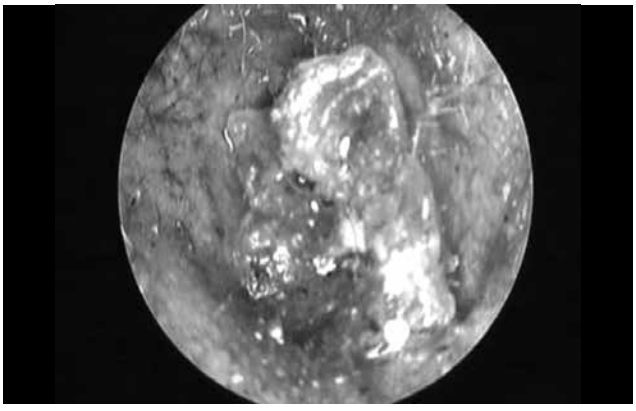

Figure 1. External auditory canal occluded with cyanoacrylate.

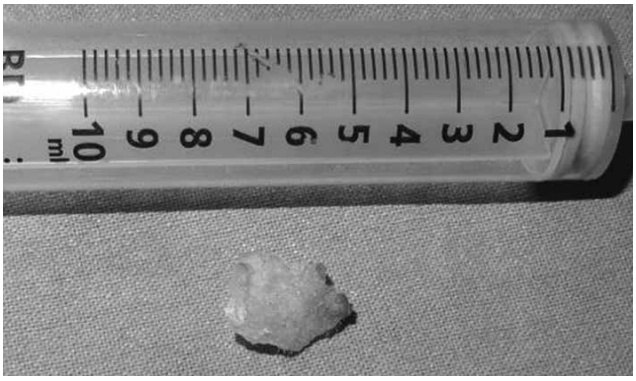

Figure 2. Cyanoacrylate mold removed *in toto*.

*Director
Bharat ENT & Endoscopy Hospital, Rohtak Gate, Bhiwani, Haryana
†Ex-Senior Professor and Head of Department
‡Ex-Senior Resident
#Senior Resident
Dept. of Otorhinolaryngology
Pt. BD Sharma Medical University, Rohtak, Haryana
Address for correspondence
Dr Rupender K Ranga
Director
Bharat ENT & Endoscopy Hospital, Rohtak Gate, Bhiwani, Haryana - 127 021
E-mail: rupenderent@yahoo.co.in

removal of foreign body under local anesthesia. After giving local anesthesia, the glue was peeled off gently *in toto* from the EAC skin and tympanic membrane using Rosen's dissector and crocodile forceps without any significant injury (Fig. 2). Mucosa had slight ooze that stopped eventually. Re-examination revealed intact tympanic membrane.

DISCUSSION

Superglue is an easily available adhesive for domestic use in India, used to bond plastic, wood and metal at homes. Human skin may also get exposed to superglue sometimes, during its use. Superglue is a cyanoacrylate monomer obtained from formaldehyde and cyanoacetate. The main constituent is cyanoacrylate which undergoes rapid polymerization, forming a hard structure in the presence of basic substances.[1] The main hardener for cyanoacrylate is water and on coming into contact with a mucosal surface such as human skin, the molecules of the glue form close-fitting chains between the surfaces, being bonded within just seconds.

Review of literature revealed a few reported cases of superglue as the foreign body in the ear with various approaches for its removal. Wight and Bull removed superglue in the EAC with an endaural incision under general anesthesia.[1,2] Pollock used the permeatal approach under general anesthesia. The most superficial layers of the tympanic membrane were removed, but no perforation was reported.[3] White and Broner reported the use of organic solvent acetone for dissolving polystyrene impacted in the EAC of a 6-year-old child.[4] Abadir et al removed superglue from the ear canal of 2 patients with the help of pure acetone.[5] Persaud used warm peroxide (3%) for removal of superglue from external auditory meatus of a patient without causing any damage to the meatus or the tympanic membrane.[6]

The removal should be carried out by a trained otologist using a microscope who has a lot of patience. Possible complications such as perforation or total avulsion of the eardrum and sometimes even ossicle must be explained to the patient and a written consent should be taken when dealing with such a situation. The patient could also develop otitis externa or media and may require future reconstructive surgery.

CONCLUSION

Removal of the cyanoacrylate glue from the EAC and tympanic membrane is a challenging situation. In the reported case, the glue was peeled off *in toto* from the EAC skin and tympanic membrane using Rosen's dissector and crocodile forceps, under local anesthesia, without causing any significant injury. Being available easily, it is recommended that superglue should be kept away from the reach of the children.

REFERENCES

1. Gogia S, Agarwal A. Removal of superglue from the external ear using acetone: A case report. Egypt J Otolaryngol. 2016;32(20:116-7.
2. Wight RG, Bull PD. Superglue ear. J Laryngol Otol. 1987;101(7):706-7.
3. Pollock HD. Glue ear - cyanoacrylic. Arch Otolaryngol Head Neck Surg. 1988;114(10):1188.
4. White SJ, Broner S. The use of acetone to dissolve a Styrofoam impaction of the ear. Ann Emerg Med. 1994;23(3):580-2.
5. Abadir WF, Nakhla V, Chong P. Removal of superglue from the external ear using acetone: case report and literature review. J Laryngol Otol. 1995;109(12):1219-21.
6. Persaud R. A novel approach to the removal of superglue from the ear. J Laryngol Otol. 2001;115(11):901-2.

■■■■

Caffeine and Parkinson's Disease

According to new research, published in *Neurology*, individuals with Parkinson's disease had lower plasma caffeine levels compared to those without Parkinson's, and the levels were even lower for Parkinson's patients having the *LRRK2* gene mutation.

Researchers reported that plasma caffeine concentration was found to be lower among Parkinson's patients compared to healthy controls, which was considerably more among *LRRK2* carriers (by 76%) compared to noncarriers (by 31%). The findings prompt future research investigating caffeine and caffeine-related therapies to decrease the odds that people with this gene develop Parkinson's. Investigators further suggest that it might be a possibility that caffeine levels in the blood could be used as a biomarker to ascertain which people with this gene will go on to develop the disease, assuming that caffeine levels remain relatively stable… (*Medpage Today*)