

INDIRECT LARYNGOSCOPY – HYDROGEN PEROXIDE AS DEFOGGER

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HOW TO CITE THIS ARTICLE:

CP Sudheer, Anoop M, Majid Khan, Laxman B, Kathyayani B, Abdul Aziz. "Indirect laryngoscopy – hydrogen peroxide as defogger". Journal of Evolution of Medical and Dental Sciences 2013; Vol2, Issue 49, December 09; Page: 9532-9533.

ABSTRACT: In ENT OPD indirect laryngoscopy is a routine procedure to examine larynx and hypopharynx. To prevent the fogging of the mirror authors used hydrogen peroxide 0.75% w/v solution which is safe and cost effective when compared to other methods to prevent fogging.

KEYWORDS: Hydrogen peroxide (H₂O₂), Indirect laryngoscopy (IDL), Defogging

INTRODUCTION: Indirect laryngoscopy which was invented by Manuel Garcia, in 1854 and further devised by Dr. Johann Czermak in 1857 is a routine ENT OPD procedure to visualize larynx and pharynx which is relatively simple. (1-2).

When compared to fiber optic system (Rigid telescopes) the resolution of the IDL is superior to that of endoscopic examination. Apart from naked flame and hot water and using savlon this is preferred method which eventually may lead to burning of oral mucous membrane and bad taste sensation.

MATERIAL AND METHODS: Dilute hydrogen peroxide solution (0.75%w/v) is used as a defogging agent on sterilized indirect laryngeal mirrors in all cases, where indirect laryngoscopic examination is required. The same solution is also used in different other occasions like few dental procedures and as a mouth wash in post tonsillectomy patients (1.5% w/v). The solution is dropped over the mirror surface and an excess is wiped off by using a Goss piece. This way a thin film of solution is formed over the surface of the mirror the patient is examined with this mirror and no fogging occurred during the procedure. The mirror is tested by emersion into the hydrogen peroxide solution 3% w/v for 24hrs and there is no deterioration in the quality of the mirror.

RESULTS: For the last two years this method of defogging the indirect laryngoscopy mirror has shown no untoward incidence in our ENT OPD. Warming the mirror with spirit lamp has caused some burning incidences previously and patients become uncooperative. So this method is bypassed. Using savlon, patients complained of bad taste in the mouth. Hydrogen peroxide solution as such acts as antiseptic and is patient friendly and safe.

DISCUSSION: Since the body temperature is higher than that of the mirror, when IDL mirror is introduced in the oral cavity, as soon as the patient expires there will be condensation of water vapor over the mirror. This leads to formation of fogging of the mirror. This leads to blurring of the image, so prevention of fogging becomes necessary. To do so, many centers use spirit lamp flame to warm the mirror surface. But the fact is the spirit lamp caused untoward incidences in over 100 ENT cases in UK over the years, such as injuries by the patients and staff being burnt by naked flame(3) and injuries by overheating of the mirrors. When the mirror is heated by the flame of spirit lamp, patients get worried and apprehensive. They think that it may burn oral cavity and throat.

Usage of hot water is not suitable as the risk of scalding is much greater and repeated usage of same water causes cross infections. (Few centers in UK use baby bottle warmers to keep the

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temperature of the water constant) and the other problem is hot water damages the reflective coating on the mirror because of repeated immersion. (4)

Butt has use 70% isopropyl alcohol to cover the mirror's reflective portion and this prevented fogging. But this is more expensive defogging solution (4). In many centers alcohol for spirit lamps (denatured spirit for medicinal purposes) is not easily available but H₂O₂ is easily available which forms thin layer of film over IDL mirror, which in turn prevents fogging.

CONCLUSION: Use of Hydrogen peroxide 0.75% w/v is found to be safe, easily available with antiseptic properties and cost effective alternative to the other methods to prevent fogging in indirect laryngoscopic examination.

ACKNOWLEDGEMENT: Authors are grateful to Mr. Ravi Varma, Director and Vice Chairman, MNR Educational Trust, Sangareddy, (AP) for giving the opportunity for conducting the above research work and to publish this paper besides encouragement and support.

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Date of Submission: 21/11/2013.

Date of Peer Review: 22/11/2013.

Date of Acceptance: 25/11/2013.

Date of Publishing: 03/12/2013.