Indirect Ophthalmoscopy; an abandoned workmanship.

Abstract

Purpose:
We sought to evaluate the application of indirect ophthalmoscopy in the routine practice of retinal surgeons.

Methods :
A self-administered questionnaire was circulated among various ophthalmologists. Potential participants were vitreo retinal surgeons and those ophthalmologists who work in a vitreo retinal department within Asia, United Kingdom and USA . The respondents were asked to mark either “YES” or “NO” for the given questions through google survey form.

Results :

Responses were obtained from 68 ophthalmologists in total out of which 57(83.82%) were retinal surgeons and 11(16.18%) were not. 66 (97.06%) admitted using an indirect ophthalmoscope in their routine practice whereas, only 2 (2.94%) were not using it routinely. 43(63.24%) considered it to be an essential tool for examining retinal patients and 25(36.76%) dont consider it a compulsory part of retinal examination.

Conclusion:

Unfortunately, the majority of ophthalmologists seem to be naive with the imperative requirement of an indirect ophthalmoscopy in order to examine vitreo retinal patients, notwithstanding the certitude that this skill has been considered mandatory in routine clinical practice of ophthalmologists.

Introduction:

The ophthalmoscopic examination is a significant clinical dexterity that permits ophthalmologists,peculiarly vitreo retinal surgeons to analyze,screen and diagnose numerous sight threatening retinal pathologies. However, despite the necessity and ascendancy of indirect ophthalmoscopes this art seems to be not fully mastered by many[10].
In this era it is observed that the indirect ophthalmoscope is an under-utilized tool in the clinical setting and that the majority of ophthalmologists lacked confidence in its use.
This prompts loss of a significant demonstrative help that depends on a compact and easy to grasp instrument[8].
The binocular indirect ophthalmoscope is an optical instrument [7]worn on the examiner's head, and sometimes attached to spectacles. It is used to inspect the posterior segment of the eye and produces a stereoscopic image with between 2x and 5x magnification. It is very beneficial for the diagnosis and treatment of retinal tears, holes, and detachments particularly when the periphery is intended to be observed. Fully dilated pupils are a prerequisite.
The examiner orientates his/her head to direct the light from the internal light source into the patient's eye in a dark room. A plus-powered condensing lens is held by the examiner at its focal length from the patient's eye for two reasons; 1.The lens ‘condenses’ light from the illumination system towards the patient's pupil. 2,Light reflected from the retina passes back through the lens creating a real, horizontally and laterally inverted image of the fundus situated between the lens and the examiner.

The viewing system of the indirect ophthalmoscope consists of a pair of low-powered convex lenses. This design renders the examiner a stereoscopic view of the virtual image.A +20D lens is the standard lens for general examination contributing to 3x magnification and a field of view of approximately 45°. A +30D lens will offer 2x magnification along with a field

of approximately 65° which is commonly used to examine small children and those with small pupils.

It is important for the ophthalmologists and vitreo retinal surgeons to master the art of indirect ophthalmoscopy and make this a mandatory practice to avoid any unforeseen complications[13].

The aim of this survey was to evaluate how much importance is given to indirect fundoscopy by the majority of retinal surgeons and those ophthalmologists who are working in a vitreo retinal setting.

Methods and Materials:

A questionnaire was formulated in which the practicing ophthalmologists were asked 6 questions through Google Survey. The survey included particularly retinal surgeons from the UK,USA and Asia.
They were asked that how often they use indirect ophthalmoscope in their clinical routine practice,how many retinal detachment patients are examined by indirect ophthalmoscope, is the indirect ophthalmoscopy done with or without indentation, how much importance does the indirect ophthalmoscopy holds in a retinal surgeon’s life?
68 respondents took part in this survey and they were not asked to identify themselves by mentioning their names but information was implored on their current position i.e;general ophthalmologists or vitreo retinal surgeons.

Questionnaires were inspected with the response of all ophthalmologists grouped together. The degree of internal consistency within the whole group of experts was measured by Kendall's coefficient of concordance (W). All descriptive data were analyzed with a statistical software package (SPSS, Version 16.0 for Windows).

Results and Discussion:

Of the 80 Google survey forms distributed online, a total of 70 were returned (i.e. 87.5% response rate), however in 2 of these the respondents

had not marked one question . 68 correctly completed survey forms were therefore available for analysis.

Responses were obtained from 68 ophthalmologists in total out of which 57(83.82%) were retinal surgeons and 11(16.18%) were not.

Table 1 : Demographic study

Questions	**Responses obtained from 68 ophthalmologists**				
	100%	75%	50%	25%	0%
For how much of your retina patients do you perform indirect ophthalmoscopy	10(14.71%)	7(10.29%)	15(22.06%)	33(48.53%)	3(4.41%)
For how much % of your retinal detachment patients do you perform indirect ophthalmoscopy	13(18.84%)	5(7.25%)	8(11.59%)	20(40.58%)	15(21.74%)
how many % of your retina patients undergo indirect ophthalmoscopy with indentation	4(5.88%)	1(1.47%)	14(20.59%)	27(39.71%)	22(32.35%)
	YES		**NO**		
Do you use indirect ophthalmoscope in your routine practice	66 (97.06%)		2 (2.94%)		
Do you consider indirect ophthalmoscopy to be an essential tool for examining retinal patients	43(63.24%)		25(36.76%)		

Retinal vasculature has the quality to be viewed even without invasive techniques and even minor retinal microvascular abnormalities can be picked on indirect ophthalmoscopy which can be sight saving as well as life saving for many patients. In today's clinical practice barely any clinicians perform ophthalmoscopy, and numerous who do can't dependably recognize anomalies of the fundus.Given the unfortunate capability of most doctors with ophthalmoscopy, the eventual fate of the assessment of the visual fundus is unsure and presents an enormous clinical challenge.

Conclusion

The most significant results show that only 25% of retina patients are examined under indirect ophthalmoscope with or without indentation. This survey highlights that indirect ophthalmoscopy as an abandoned workmanship of the modern era[9][14]. Notwithstanding the revolution in the field of ophthalmology, ophthalmologists should still rely primarily on using an indirect ophthalmoscope to assess the prognostic signs in a retina that may lead to retinal detachment and other sight threatening complications.
Yet, clinicians still appear to avoid the indirect ophthalmoscope in practice, putting patient safety at risk.

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