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Malingering or Simulation Testing Methods in Optometry: An Indian Scenario

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ABSTRACT

Aim: To describe various methods of eye related test used to identify psychogenic visual impairment &/ or malingering. Malingering in Optometry manifests either as imitating an ocular disease or as contradiction of ocular disorder. In all cases of imitating or denial of ocular disease, there is only one reason i.e. Social as well as economic benefits and advantages.

Material & Methods: Narrative review was done to review the articles available on the PubMed related to the Indian scenario about the various methods of malingering identification and strategies to deal with malingerers. Peer reviewed articles/ studies were referred to ascertain the available screening tests for malingering patients.

Results: Some authors suggest that malingering is a manifestation of underlying psycho-pathology. Every Ophthalmologist/Optometrist can face with simulation suspect. The Eye care professional's responsibility is to prove the simulation considering the disease/disorder first and simulation later.

Conclusion: Malingerer does everything to cheat Ophthalmologist/Optometrist. Commonly it is associated with concurrent diagnosis of depression, anxiety, panic, attack and psychiatric disorders, etc. Diagnosing the malingering patient is much more difficult so the subjective as well as objective test should be carried out properly. These tests mainly help us to confirm about the malingering nature of patients and prove that they are having normal vision.

Keywords: Malingering, Simulation, Eye-care, Optometry, Subjective and Objective.

INTRODUCTION

Malingering or simulation refers to as an intentionally counterfeiting a disease with benefit instinct like in case of misattributing his/her symptoms to another irrelevant clinical entity like in case of exaggerating. If the subject believes that he/she is really ill, then it's called 'conversion reaction' or 'hysteria'.[1] Hence, in ophthalmology it is termed as hysterical blindness.

In Indian scenario, many Ophthalmologist/Optometrist are facing issues regarding malingering such as complaints about a functional vision loss (FVL) for which patients are unable to explain about their visual condition and reason or cause of it. So, it becomes very difficult to deal with them. When even most of eye examination or questioning doesn't reveal the actual cause of the functional vision loss or proves that there is an actual loss of vision, Optometrists/ Ophthalmologists may have to doubt/ suspect them as ocular malingering cases.[2-4]

In all cases of malingering, there is only one solid aim or reason behind i.e benefits/advantages. Benefits are mainly of two kinds: Financial and Non-financial. Many times, malingerer does want to cheat because of several reasons like relief from court penalty, escape of military service or other job/ work, getting benefits from insurance companies, free medicine, getting free government services, free medical equipments, etc. And even malingerer's

main purpose can be to get sympathy from family members and neighborhood.[5-7]

In malingering a person poses to be visually defective, while he is not. The person may do so to gain some undue advantage or compensation. Usually one eye is said to be blind which doesn't show any objective sign. Rarely, a person pretends to be completely blind. In such type of cases, a constant watch over the behavior may settle the issue.[8]

Patient does anything to cheat the Optometrist/Ophthalmologist for your benefit or getting compensation. Patient may show some misbehavior towards Optometrist/Ophthalmologist, when they try to explain about his malingering nature.[9] In the same time, it is very difficult for an Optometrist/Ophthalmologist to distinguish whether the patient would be really having problem or complaint of loss of vision or whether he is only malingering with Optometrist/Ophthalmologist.

The American Psychiatric Association (DSM-IV-TR, 2000) defines the ocular malingering in the section "Additional conditions that may be a focus clinical attention" as "the intentional production of false or grossly exaggerated physical or psychological symptoms, motivated by external incentives."[10] Halligan, et. al (2003) powerfully brought together medical, neuro-psychological, legal and social perspectives on the subject. The suspicion of malingering naturally crosses the minds of clinicians facing patients with atypical complaints of various kinds, in absence of demonstrable medical bases.[11]

Indeed, most standard diagnostic tests include groups of items specifically designed to detect persons who are faking psychiatric disorders or who are attempting to hide psychiatric disorders.[12] General strategy for detecting/ identifying malingering is to use techniques that can reveal behavior inconsistent with the claimed loss. In the field of personality assessment and psychological/ psychiatric disorders, the use of this strategy has a long history.[13] Claimed sensory loss may be the basis of a personal injury lawsuit or the seeking of disability benefits. In such cases, a detailed history of the complaint can reveal inconsistencies, but these by themselves may not be sufficient to prove malingering in a court of law.[14]

Decreased visual acuity is one of the most common non-organic complaints encountered in the practice of ophthalmology, [15-17] may be psychogenic or the result of malingering. Most of the tests used in assessing this complaint can roughly approximate the true visual recognition acuity.[18-20] Objective methods using eye-movement recordings[21-23] or visual evoked cortical potentials[24] also only estimate acuity, as their accuracy is limited by patient cooperation and by the fact that response to the detection stimuli used is not necessarily equivalent to the recognition of a corresponding opto-type. Many subjective tests are based on feints, deluding the subject by a change in the test distance and the detail size of the opto-type. These test methods are effective in proving presumptive malingering.[25]

Some important points which can be very helpful in malingering/doubtful cases-

1. Perform eye examination as a daily routine work smoothly and quickly. Do not let patient to know about your diagnosis or else patient may be very much attentive towards his eye examination.[26]
2. Note down all the complaints and symptoms as well as notice/ monitor the behavior of the patient while he enters the OPD and even his posture, mental profile and reactions performed.
3. Better to examine the patient alone without any family members or friends.
4. An eye witness may be a professional colleague with you during examination is necessary in case of future judicial investigations.[27]

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ascertain the available screening tests for malingering patients.

Classification of Malingering

Malingering is to mislead willfully in regard to the existence of a disease in order to gain a desired end.[28] Possible malingering types are as follows[29]:

1. Simulation: feigning of a non-existent disease.
2. Exaggeration: the pretence that a certain condition is worse than it actually is.
3. False attribution: assignment to a disease or injury of an origin other than the real one.
4. Dissimulation: the pretence that a disease does not exist or that its effects are less than they actually are. It is thus a form of reverse malingering and is found in candidates for insurance or entry into service.
5. Deliberate malingerer: faking of visual problems and monetary gain.
6. Worrying imposter: knowing exaggerating visual symptoms and doesn't want problem to be overlooked or missed out.
7. Suggestible innocent: convinced self of a vision problem and very complacent not worried about problem.

Many classifications and different terminology have been used to describe apparent poor acuity in patients who should by all objective tests have a fully functioning visual system and therefore good acuity.[30] The main distinction when poor acuity is found in such circumstances is whether the patient responses were consciously or sub-consciously worse than 'physically possible'. Consciously giving incorrect responses when examined is medically termed malingering.[31]

Malingering can be positive or negative. Positive malingering is the conscious creation of a functional defect for example, pretending to be unable to see/hear/do something when you really can. This is most commonly encountered in optometric practice. Negative malingering is 'pretending' a defect does not exist for example, learning the bottom line of the Snellen's chart as to try and avoid wearing spectacles.[32]

Diagnosis & Evaluation of Malingering

Before diagnosing malingering patients following conditions (which produce visual loss with apparently normal anterior segment and a normal fundus) should be ruled out:

1. Amblyopia: Many a time an individual may suddenly notice poor vision in one eye though the onset is usually in early childhood. It's a condition of unilateral or bilateral decreased of visual function which may be caused by form vision deprivation or an abnormal binocular interaction that cannot be explained by a disorder of ocular media or visual pathway itself. It is important to identify an amblyogenic factor.
2. Cortical blindness: It is must be ruled out from its characteristics features. It is characterized by: Bilateral loss of vision, Normal pupillary light reflexes, Visual imagination, Anton syndrome (denial of blindness by the patients who obviously can't see), Riddoch phenomenon (ability to perceive kinetic but not static targets).
3. Retrobulbar neuritis: It is a common cause of visual loss with normal fundus. Presence of a definite or relative afferent pupillary defect (RAPD), and visually evoked response (VEP) are diagnostic.
4. Cone & Rod dystrophy: It is characterized by a positive family history, photophobia in bright light, abnormal dark adaptation and abnormal cone dystrophy electroretinogram (ERG).
5. Chiasmal tumor: It may sometimes present with visual loss and normal fundus (before the onset of optic atrophy). Sluggish pupillary reactions to light with characteristics visual field defect may be noted.
6. Anxiety and depression: It's characterized by feeling fatigue easily, difficulty concentrating or recalling, sleep difficulties, decreased energy, chronic fatigue, loss of interest etc.
7. Panic attacks: Sudden episode of intense fear or anxiety and physical symptoms,

based on a perceived threat rather than imminent danger.

8. Fibromyalgia: Widespread muscle pain and tenderness. It is often accompanied by fatigue and altered sleep, memory and mood.

9. Psychiatric disorders (up to 50%): A wide range of conditions that affect mood, thinking and behavior.

10. Conversion disorder[33]: Conversion disorder is a disorder in which a person experiences blindness, paralysis, or other symptoms affecting the nervous system that cannot be explained solely by a physical illness or injury. Symptoms usually begin suddenly after a period of emotional or physical distress or psychological conflict.

11. Cancer related retinopathy: Some rare cases of cancer related retinopathy would express with nonspecific symptoms like decreased visual acuity and visual phenomena like floaters. In fundus examination perhaps only arteriolar narrowing would be observed. Those cases would be diagnosed with high suspicion rate and para-neoplastic antibody tests. Visual field narrowing, abnormal dark adaptation and ERG would be useful in documentation.[34]

Test to rule out organic involvement: [35]

- Visual acuity
- Visual fields (central & peripheral)
- Ocular motility (eye alignments, convergence, fixation etc)
- Color perception
- Contrast sensitivity
- Stereopsis
- Electro-physiological tests
- Neuro-imaging

Confirmatory Tests for Malingering

Every patient should be subjected to the subjective and objective testing to diagnose malingering along with the sincere co-operation of subject before finally concluding/ confirming any subject as a malingering case.

Subjective test for malingering:

1. Convex lens test: Place a low convex lens (+0.25D) before the blind eye and a high convex lens (+10D) before the good eye. If the patient can read distant words, malingering is proved.
2. Prism base down test: Place a prism with its base downwards before the good eye and tell the patient to look at a light source. If the patient admits seeing two lights, it confines malingering.
3. Prism base out test: Ask the patient to look at a light source then a prism of 10PD is placed before the alleged blind eye with its base outward. If the eye moves inward (to eliminate diplopia) malingering is proved.
4. Snellen's colored type test: It has letter printed in red and green. Place a red glass before the good eye. If the patient can read all the letters, it confines malingering because, normally one can see only red letters through red glass.
5. Eye contact: Eye contact is an important feature to differentiate from ocular disease. With the help of eye contact catch a malingering patient, those who assert that they are fully blind or not.
6. Observation: Truly blind persons always proceed cautiously and avoid the objects like furniture and dustbins etc. but malingerers knowingly bump into objects.
7. Hand looking test: Examiner asks the patient to look at their own hand. Truly blind patient moves his hand, looks at it and says I cannot see my hand but I know where it is. But, malingerer moves his hand and says that I am totally blind and I cannot see it.
8. Signature Test: Truly blind patients can do these without difficulty as these do not require vision but malingering patients will often not be able to do them, they will just scribble something.
9. Surprise Test: Suddenly if examiner makes a face or makes shocking actions, etc. and observes the patients response, a change in the patients look is suggestive of malingering.

10. Mirror test: The examiner moves the mirror towards and away from the subject and simultaneously examiner looks at the subject's eye secretly. If the subject moves his eye and look in the mirror, then it denotes that patient is able to see it.[36]
11. Room with obstacles test: Room with obstacles test could be performed as a first choice.[37] A true blind walks head up, but a simulating person head down and upset with fear of getting caught, simulating person sometimes wears dark glasses and holds a white blind walk cane. Wearing dark sunglasses all the time is a sign of simulation.[38] Real blind people are calm, walk in the room calmly and attentively examining their front, sensing the obstacles and walk peripheral. Conversion cases can easily walk around of obstacles without hitting.[39]
12. Menace test: When subject sitting in his/her chair comfortably, examiner passes his/her hand close in front of subject's eye suddenly. If the subject closes his eyes, it means that he/she sees.
13. Finger to nose test: It has the same physiological mechanism and diagnostic value of finger to finger test below. Subject is asked to touch his/her index finger to nose when eyes are closed. Simulator again plays a role that he/she tries but can't do it.
14. Index finger or proprioception test: Subject is told to hold his /her arms up in shoulders and hands open to the sides, when his/her eyes shut. He/she is told to put his/her index fingers end-to-end in the front. Real blind can do that due to deep lemniscal sensitivity. Malingerer plays role he/she tries but can't do it.
15. Lytton test: It may be performed. Before of weak eye +1.0D in 90 degrees and -1.0D in 45 degrees glasses placed and sound eye closed. Subject is told to find the brightest view. An honest subject neutralizes two glasses in 90 or 45 degrees and reads honestly. Malingerer doesn't neutralize the lenses properly and reads maximum half of his/her real vision.
16. Baudry test: Examiner wants the subject to read near chart. He/she will say that he/she can't read. Then examiner places +6.0D in trial set and asks the subject to read near chart in tip of nose and then says that the power of glasses will be doubled. In contrast, examiner places -6.0D glasses and at the same time draws near chart to read distance. If the subject simulates, he/she can easily read the chart, then his/her real vision is measured.
17. Special opto-types: Special opto-types could also be used. If subjects who cannot know real visual equivalent of opto-types cooperates and reads honestly, his/her visual acuity could be determined.
18. Ruler test: While subject reads near chart from 50-60cm, a ruler or tongue plate is placed in front of nose horizontally from 15-20 centimeters (cm) and is again asked to read. Because of visual fields superpose binocular persons read easily. A real monocular subject hesitates and cannot read.
19. Pencil test: Similar to ruler test, while subject reads a near chart, examiner slowly places a pencil before the sound eye without subject's awareness. If subject really has a problem in bad claimed eye, he/she can't keep reading easily.
20. Vertical bar test: Similar to another version of this test, while subject reads newspaper from 50 cm a tongue plate is placed in front of his/her face to 20cm. If vision is good bilaterally, subject can keep reading. But if one eye is weak and tongue plate is placed before sound eye, subject gets distracted and changes his/her head position.
21. Encourage test: This test is defined before. In some situations, such as compensation trials, reminding the simulator the legal implications that he/she would suffer in case he/she is

proved to be a simulator, would be enough to get the result.

22. Near vision reading test: Subject is asked to read near chart with the bad eye. If he/she can read smaller letter paragraphs, it's thought that he/she simulates, because near reading well requires reading far also. In this test, subject must wear his/her near glasses if necessary. If distant vision is good but near vision is abnormal examiner must check media opacities like polar or posterior sub-capsular cataracts.
23. Low vision AID instruments: Sometimes may help differentiation. A hand-held 2.2X afocal telescopic lens over distant correction is expected to enhance vision two times. This test may reveal malingering if patients insist on his claim at bad near vision only.
24. Mojon test: Snellen's letter of 10 rows having an equal minimum angle of resolution is shown to the patient. If the patient inform that they cannot read the letters then it conforms Malingering.[40]
25. Duane test: It is as same as prism test, where examiner puts 10 PD base up lens on defective eye while subject is reading near chart with both eyes open, and if patient delay to read even a second, it's malingering.
26. Pinhole test: When the subject is asked to read the letter at distance by keeping a pinhole before good eye and bad eye is kept as it is. During the test if the patient keeps on reading the letter then the examiner slowly place out the pinhole from the trial frame without subject's awareness. If patient is able to read then let him continue reading till last line.
27. Cycloplegia test: Sight of subject is blurred with cyclopentolate drops 2 or 3 times on the sound eye, and on the so called bad eye but with another dropper filled with serum physiological and labeled the same with the cyclopentolate. After 45 minutes subject is asked to read from 5 meters eyes separately closed, eye with cyclopentolate reads from 5 meters easily, but subject refuses sincerely to read with so called bad eye. Then near reading bar J3 or J4 is asked to read with both eyes open that means subject can read with only bad eye without cyclopentolate. Subject reads bar's smallest paragraph easily thinking that he/she reads binocularly.
28. Diploscopy test: In this test, there is a screen diameter of 60 cm perforated by transverse holes and subject looks from screen to a cartoon written K, O, L, A with majiscules. Test principle is physiological diplopia and right eye sees K and L, left eye O and A. Simulator sitting front of diploscope can see all letters if only both eyes are sound. With this test, visual acuity discrimination could also be assessed with appropriate size letters.[41]
29. Synoptophore test: When two fusion pictures (rabbit and cage) are shown and subject can see simultaneously both of them, it means good binocular vision is present.
30. FRIEND test: The patient wearing red and green goggles is asked to read the colored word "FRIEND". The red and green glasses and the red and green letters should be of complimentary colors. If he reads all the letters of the word, he is using both the eyes.
31. Bishop-Harman diaphragm test: Show the patient letters on this instrument. He does not know that he sees the left hand letters with the right eye and vice versa, and may well read only the letters seen by the pre tended blind eye.

Objective test for malingering:

1. Pupillary examination: Totally/ truly blind eye has non-reactive pupil to light, exception cortical blindness (It is associated with intact pupillary reactions). So if a patient claims of total blindness with intact pupillary response and no evidence of cortical blindness, suspect malingering. In case of unilateral vision loss, a relative afferent pupillary defect (RAPD) is usually present.

2. Optokinetic nystagmus test (OKN): While the subject is looking at Barany's cylinder, if nystagmus appears, it means he/she sees it. It means at least 1/20 or 1/10 Snellen line vision. This test needs strict lighting conditions and standard Barany's cylinder. It's useful to diagnose in conversion and malingering.
3. Psycho-galvanic test: Subject sits in front of a slit lamp and suddenly a bright light reflected on his so called weak eye. If he/she blinks or watering occurs, it means that he/she sees the light. Light sweating and vasomotor stimulation also could be observed and is interpreted again as simulation.
4. Head rotation test: Head of subject can be rotated fast about 30 degrees in opposite directions and if nystagmus occurs, it means that the case couldn't see at all. If no nystagmus is present, at least one fixation mechanism and indirectly some degree of vision is present.
5. Electro-encephalography: If changes in basal occipital rhythm recordings are observed when light is projected to eyes, it indicates there is at least slight visual activity.
6. Pattern visually evoked potentials (pVEP): Pattern visually evoked potentials is well-known method for evaluation of afferent visual pathway dysfunctions including the macula and the optic nerve. In case of unilateral amblyopia or blindness, asymmetrical recordings of two eyes are expected. pVEP can easily discriminate existence of unilateral blindness but may not help to quantification of visual acuity between 2/10 and full vision, 10/10. Normal pVEP and ERG is not compatible with visual acuity less than 6/10. On the other hand, pattern VEP recordings using 5 different pattern sizes has been shown to quantify the visual acuity level and pattern VEP is well correlated with visual acuity levels with sensitivity 97% and specificity 62%.[42]
7. Optical coherence tomography (OCT): OCT can be used both in unilateral and bilateral amaurosis examination. This test is valuable especially for cases presenting with optic disc pallor resembling optic atrophy. In this technique, temporal nerve fiber layer measurement is important. Cut-off level, (which is around 67.5, for particular population) can be used in cases with bilateral involvement. Normal test results may disclose malingering objectively.
8. Pattern electro-retinography (pERG): pERG is a useful electro-diagnostic test to compare both retinas of subject as well as for diagnosis, documentation, and quantification of present pathology. Normal PERG means both of the optic nerve and the macula are functionally sound. PERG is of use in two ways in unexplained visual loss cases. First, it easily identifies photoreceptor dysfunction syndromes that rarely manifest in clinical fundus examination. Second, normal ERG indicates that fixation is good and optic picture focuses better in retina. Therefore combination pattern ERG and VEP recordings are necessary in the most of malingering or conversion cases.
9. Multifocal electro-retinography (mfERG): mfERG can be used to assess fixation losses, which is not rare in malingerers. Also, increased diagnostic value of this test when used combined with PVEP has been demonstrated. Another study reports that VEP and mfERG combination is of use for both localize the area of pathology and check if visual pathways are normal.[43-45]

Logical management of malingering

- Psychological support and reassurance
- Placibo treatment (like as sugar tablets, Plano glasses, various non-reactive/ non allergic drops, etc.) is also helpful.
- Counseling of patients and their family members or friends.
- Follow-up care

CONCLUSION

In today's Indian scenario of ophthalmic practice, there is a need that every Optometrist/ Ophthalmologist should have more and more knowledge about the malingering. Blindness may be not only the inability to see but may be the desire not to see. We as an eye care professionals should realize that a thorough understanding of the human eye is not enough. We must understand the human being of which the eye is but a small part.[44] Best examination method for malingering to choose is the one that can be used by the examiner efficiently and with ease. There are mainly two types of tests for malingering: 1) Confounding. 2) Fogging. Sometimes combination of both is used. Those tests are based on either subjective (patient-dependent) or objective (instrument dependent) evaluation.[46]

First of all, it's important and logical for the Optometrist/ Ophthalmologist to think deeply that subjects would be truly ill or not. Commonly, it is associated with concurrent diagnosis of depression, anxiety, panic, attack and psychiatric disorders, etc. Diagnosing the malingering patient is much more difficult so the subjective as well as objective test should be carried out properly. These tests mainly help us to confirm about the malingering nature of patients and prove that they are having normal vision.

Certainly there is need and essentiality to gain more knowledge on malingering in order to deal with malingering patients in very proper and organized manner without any hesitation or any fear and without creating any pressure on the patients. Government institutions used to face more such type of malingering cases than any other type of institute due the fact the certification provided by the government institution in many cases more valid and acceptable by the authorities.

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