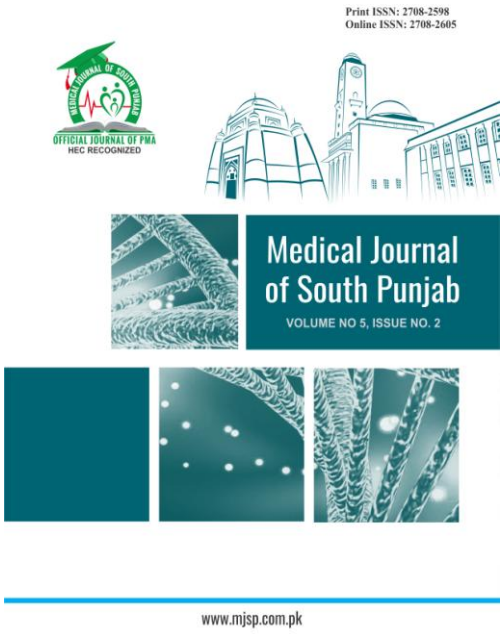
ISSN (E): 2708-2601
ISSN (P): 2708-2598

Medical Journal of South Punjab
Article DOI :10.61581/MJSP.VOL05/02/17
Volume 5 , Issue 2, 2024



Frequency of visual snow syndrome in migraine patients at tertiary care hospital

Publication History

Received: Oct, 12 2023 Revised: Nov 16, 2023
Accepted: Nov 21, 2023 Published: Mar 30, 2024

Authors and Affiliation:

Minahil Shakeel[1], Manzra Shaheen[2], Nabila Zulfiqar[3], Ammara Affi[4]

[1-2] Fatima memorial Hospital Shadman, Lahore, Pakistan.

[3] FMH College of Medicine and Dentistry

[4] Fatima memorial Hospital Shadman, Lahore, Pakistan.

*Corresponding Author Email: minahilshakeel219@gmail.com

Conflict of Interest:

Author(s) declared no conflict of interest.

Acknowledgment:

No Funding received.

Citation: Shakeel M,Shaheen M, Zulfiqar N, Affi A. Frequency of visual snow syndrome in migraine patients at tertiary care hospital. Medical Journal of South Punjab. 2024 March 30; 5(1):82-87.

Please scan me to access online.

An official publication of
Medteach Private Limited, Multan, Pakistan.
Email: farman@mjsp.com.pk, Website: https://mjsp.com.pk/index.php/mjsp

Medical Journal of South Punjab
Volume 5, Issue 2, 2024; pp: 82-87
Original Article

Frequency of visual snow syndrome in migraine patients at tertiary care hospital

Minahil Shakeel[1], Manzra Shaheen[2], Nabila Zulfiqar[3], Ammara Affi[4]
[1-2] Fatima memorial Hospital Shadman, Lahore, Pakistan.
[3] FMH College of Medicine and Dentistry
[4] Fatima memorial Hospital Shadman, Lahore, Pakistan.
[*]Corresponding Author Email: minahilshakeel219@gmail.com

ABSTRACT

Objective: *To investigate the frequency of visual snow syndrome in migraine patients in a tertiary care hospital.*

Methods: *A total of 58 subjects with migraine between age group of 20 to 50 years were studied for the assessment of visual snow syndrome. Informed consent was taken and demographic data of the patients were also recorded. Clinical characteristics were collected from patients through a self-designed questionnaire. The questionnaire was based on migraine history, family history of migraine, duration of migraine, presence of visual snow and presence of additional visual symptoms such as palinopsia, enhanced entoptic phenomena, photophobia and nyctalopia. Preliminary test was performed including assessment of visual acuity. Dilated fundus examination was done to examine disc and macula. The incidence of visual snow syndrome was judged according to the proposed criteria of visual snow syndrome.*

Results: *A total of 3 (5.2%) out of 58 subjects met the criteria for visual snow syndrome. These subjects had migraine for less than 5 years and had visual snow that last longer than 3 months and had at least two additional visual symptoms. A P-value <0.05 was considered as statistically significant.*

Conclusion: *The study concluded that there was no statistically significant association between visual snow syndrome and migraine.*

Keywords: *Entoptic Phenomena, Migraine, Nyctalopia, Palinopsia, Photophobia, Visual Snow Syndrome*

1. INTRODUCTION

Visual snow syndrome is described as tiny flickering dots that mimic the noise of a detuned analogue television.(1) Visual snow is a neurological condition that causes a constant visual disruption to fill the whole visual field.(3)(4) In addition to the “static”, or “snow”, those who are affected may also experience other visual symptoms like palinopsia, photophobia, sensitivity to light, entoptic phenomena, and decreased night vision (nyctalopia), as well as static or "snow" that persists or recurs after the image has been removed.(5)(6)

Patients may also experience palinopsia (the preservation of images from motionless scenes or visual trailing)(7) , photophobia (pain caused by bright or faint light)(8) , nyctalopia (inability to see well at night or in low light conditions, such as in a restaurant or a movie theatre, is referred to as nyctalopia.)(9) , or entoptic phenomena in addition to the static or snow.(10) A neurologic condition called migraine frequently results in a severe headache.(11) The headache comes in bursts, and it may also occasionally be accompanied by nausea, vomiting, and light sensitivity.(11)(12)

Visual snow has been linked to migraine sickness ever since it was first described.(11) Visual snow syndrome was once thought to be a rare consequence of this disorder, which is considerably more common, and was only later identified as a distinctly separate condition.(13) Importantly, even though the two are frequently co-occurring and that migraine biology aggravates the clinical phenomenology of Visual snow syndrome, standard migraine therapies have little to no effect on visual snow syndrome.(14)(15)

The number of patients who experience visual snow syndrome (VSS) worldwide is currently unclear. Recent studies have shown that the prevalence of visual snow syndrome, 2.2% of respondents in a representative British sample met the criteria for the visual snow syndrome, while 3.7% of respondents reported symptoms compatible with visual snow.(16)

The main aim of study is to determine the frequency of visual snow syndrome in migraine patients at tertiary care hospital. To investigate the role of migraine mechanism underlying visual snow, we sought to assess whether the presence of migraine is associated with visual snow syndrome. The main purpose of study is to create more awareness regarding visual snow syndrome so that treatment options will be taken to prevent discomfort among patients.

2. METHODOLOGY

It was observational, cross-sectional study. The study was conducted in the ‘Department of ophthalmology’ of Fatima Memorial Hospital and College of Medicine and Dentistry, Shadman, Lahore. The study was completed from September 2023 to December 2023 after permission from IRB. A sample size of 58 subjects were included in this study. Non-probability consecutive sampling technique was used. Both male and female between the age group of 20 years to 50 years having migraine were included in this study. Subjects with any ocular pathology were excluded from the study. Informed consent was taken and demographic data (name, age, gender) of the patients were also be recorded. Clinical characteristics were collected from patients through a self-designed questionnaire.

The questionnaire was based on migraine history, family history of migraine, presence of visual snow and presence of additional visual symptoms such as palinopsia (the preservation of images from motionless scenes), enhanced entopic

phenomena (appearance of tiny bright dots moving quickly), photophobia (pain caused by bright or faint light) and nyctalopia (inability to see well at night or in low light conditions). Different medications including standard psychopharmaceuti- cals, pain medication, antiepileptics, and migraine prophylactics prescribed by the general physician for the symptomatic relief had not shown resolution of effects by therapy.

Preliminary test was performed including assessment of visual acuity. Dilated fundus examination was done to examine disc and macula by an ophthalmologist. The incidence of visual snow syndrome was judged according to the proposed criteria for visual snow syndrome by Goadsby and co-workers, that includes the presence of visual snow in entire visual field lasting longer than 3 months and the presence of at least two additional visual symptoms from palinopsia, enhanced entopic phenomena, photophobia and nyctalopia. All the required information will be collected on a self-designed questionnaire.

Data analysis: The data was entered and analyzed using software IBM-SPSS V-25 software. The categorical variables were expressed as frequency and percentages. Bar charts were used to display categorical data. Chi-square test was used to find association between categorical variables. A P-value <0.05 was considered as statistically significant. As it is observational study so there was no ethical issue or any religious barrier in this study.

3. RESULTS

In this study frequency of visual snow syndrome was determined in migraine patients. The study included 58 subjects. The mean age was 30.33(SD=7.803) years with the range of 20 to 50years. Frequency distributions of subjects by gender is shown in Table 1:

Table-1: Distribution of cases by gender (n = 58)

Sex	Number of cases	Percentage
Male	13	22.4
Female	45	77.6
Total	58	100.00

Out of 58 subjects, 46(79.3%) subjects had migraine for less than 5 years and 12(20.7%) subjects had migraine since 5 to 10 years. The frequency distribution of subjects according to duration of migraine is shown in Table 2:

Table-2: Distribution of patients by duration of migraine (n = 58)

Duration of migraine	Number of patients (Frequency)	Percentage %
Less than 5 years	46	79.3
5 to 10 years	12	20.7
Total	58	100.00

Out of 58 subjects, 18 (31.0%) have palinopsia, 25 (43.1%) have enhanced entoptic phenomena, 29 (50.0%) have photophobia, and 5 (8.6%) have nyctalopia. The frequency distribution of these symptoms is shown in Table 3:

Table-3: Distribution of patients by additional visual symptoms (n = 58)

Additional visual symptoms	Number of patients (Frequency)	Percentage %
Palinopsia	18	31.0
Enhanced entoptic phenomena	25	43.1
Photophobia	29	50.0
Nyctalopia	5	8.6
Total	58	100.00

The incidence of visual snow syndrome was judged according to the proposed criteria of visual snow syndrome that include the presence of visual snow that lasts more than 3 months with at least two additional visual symptoms from palinopsia, enhanced entopic phenomena, photophobia and nyctalopia. According to duration of migraine 43(93.5%) subjects had migraine for less than 5 years and only 3(6.5%) subjects were presented with incidence of VSS. Subsequently the 12 subjects had migraine since 5 to 10 years but none of them presented with incidence of visual snow syndrome. Out of 58 subjects only 3(5.2%) subjects met the proposed criteria of visual snow syndrome. The frequency of visual snow syndrome is shown in Table 4:

Table-4: Frequency of Visual Snow Syndrome (n = 58)

Visual Snow Syndrome	Number of cases (Frequency)	Percentage %
Yes	3	5.2
No	55	94.8
Total	58	100.00

4. DISCUSSION

The result of this study shows that visual snow syndrome is less likely to be linked with migraine. The results show that subjects meeting the criteria of visual snow syndrome were only 3 (5.2%). This study included 58 subjects. However, on further investigations in subjects with migraine it was found out that the percentage of palinopsia out of 58 subjects was 18 (31.0%), percentage of enhanced entoptic phenomena was 25 (43.1%), percentage of photophobia was 29 (50.0%) and percentage of nyctalopia was only 5 (8.6%). The 46 (79.3%) subjects had migraine for more than 5 years and 12 (20.7%) subjects had migraine since 5to 10 years. Most subjects have normal best corrected visual acuity, and fundoscopy. According to previous studies, the presence of visual snow in entire visual field lasting longer than 3 months with the presence of at least two additional visual symptoms fall in criteria of visual snow syndrome. And out of 58 subjects, only 3 (5.2%) subjects met this criteria. A previous study conducted by Christoph J. Schankin on the relation between migraine and visual snow suggested that there was no statistically significant association between visual snow syndrome and migraine and thus visual snow syndrome is a disorder distinct from migraine.(14)

In our study population, subjects with migraine were asked questions about visual snow, duration of visual snow and additional visual symptoms of Visual Snow Syndrome. Only the 3 (5.2%) cases had visual snow that lasts longer than 3 months and had at least two additional visual symptoms. According to this study, the occurrence of visual snow syndrome in migraine patients is quite low. Our study acknowledges an overlap of migraine and visual snow syndrome but do not support the hypothesis that migraine cause visual snow syndrome.

major conclusion drawn from this is the presence of migraine might aggravate the manifestation of the VSS by worsening additional visual symptoms like palinopsia, enhanced entoptic phenomena and nyctalopia.

5. CONCLUSION

Visual snow syndrome is described as tiny flickering dots that mimic the noise of a detuned analogue television. A neurologic condition called migraine frequently results in a severe headache. The headache comes in bursts, and it may also occasionally be accompanied by nausea, vomiting, and light sensitivity. Visual snow has been linked to migraine sickness ever since it was

concluded there was no statistically significant association between visual snow syndrome and migraine.

6. REFERENCES

1. Schankin CJ, Maniyar FH, Digre KB, Goadsby PJ. “Visual snow” - A disorder distinct from persistent migraine aura. Brain. 2014;137(5):1419–28.
2. Metzler AI, Robertson CE. Visual Snow Syndrome: Proposed Criteria, Clinical Implications, and Pathophysiology. Curr Neurol Neurosci Rep. 2018;18(8):1–9.
3. Sampatakakis SN, Lymperopoulos L, Mavridis T, Karagiorgis G, Papadopoulos C, Deligianni CI, et al. Visual snow: A systematic review and a case series. Cephalalgia. 2022;42(13):1409–19.
4. Puledda F, Schankin C, Goadsby PJ. Visual snow syndrome: A clinical and phenotypical description of 1,100 cases. Neurology. 2020;94(6):E564–74.
5. Schankin CJ, Goadsby PJ. Visual Snow—Persistent Positive Visual Phenomenon Distinct from Migraine Aura. Curr Pain Headache Rep. 2015;19(6).
6. Graber M, Scutelnic A, Klein A, Puledda F, Goadsby PJ, Schankin CJ. Natural course of visual snow syndrome: a long-term follow-up study. Brain Commun [Internet]. 2022;4(5):1–6.
7. Gersztenkorn D, Lee AG. Palinopsia revamped: A systematic review of the literature. Surv Ophthalmol [Internet]. 2015;60(1):1–35.
8. Drummond PD. A Quantitative Assessment of Photophobia in Migraine and Tension Headache. Headache J Head Face Pain. 1986;26(9):465–9.
9. Brouzas D, Charakidas A, Vasilakis M, Nikakis P, Chatzoulis D. Nyctalopia in antiquity. Ophthalmology. 2001;108(10):1917–21.
10. Crystallography XD. Entopic phenomena. 2016;1–23.
11. Lipton RB, Diamond S, Reed M, Diamond ML, Stewart WF. Migraine diagnosis and treatment: Results from the American migraine study II. Headache. 2001;41(7):638–45.
12. Europe W. Migraine. 2017;346(4):257–70.
13. Silva EM, Puledda F. Visual snow syndrome and migraine: a review. Eye. 2023 Feb 14.
14. Schankin CJ, Maniyar FH, Sprenger T, Chou DE, Eller M, Goadsby PJ. The relation between migraine, typical migraine aura and “visual snow.” Headache. 2014;54(6):957–66.
15. Barral E, Martins Silva E, García-Azorín D, Viana M, Puledda F. Differential Diagnosis of Visual Phenomena Associated with Migraine: Spotlight on Aura and Visual Snow Syndrome. Diagnostics. 2023;13(2):1–14.
16. Kondziella D, Olsen MH, Dreier JP. Prevalence of visual snow syndrome in the UK. Eur J Neurol. 2020;27(5):764–7.