ISSN: 2230-9926

Available online at http://www.journalijdr.com

IJDR

International Journal of Development Research
Vol. 08, Issue, 12, pp.24646-24649, December, 2018

ORIGINAL RESEARCH ARTICLE OPEN ACCESS

POSTERIOR CAPSULOTOMY BY 1064NM Q- SWITCHED ND: YAG LASER

***Dr. Sundus Jasim Mohammed**

Department of Opthalmology, Madenet Al- Immamian Al- Kadymian Medical City

ARTICLE INFO

Article History:

Received 22nd September, 2018
Received in revised form
19th October, 2018
Accepted 25th November, 2018
Published online 26th December, 2018

Key Words:

Posterior capsule opacification,
Nd: yag laser,
visual acuity cataract surgery.

ABSTRACT

Background: Opacification of the posterior capsule is one of the most common complication fallowing the cataract surgery. The patient complains from a drop in visual acuity after period of time after cataract surgery. To solve this problem is done using Nd: yag laser by breaking posterior capsule and thus retain the vision and get a good visual acuity. **Objective:** This study aimed to prove that YAG laser is the accurate way in treatment of posterior capsule opacification that the patient gets better vision. **Method:** This study conducted from November 2017 to April 2018 examination of 100 patients in the eye clinical of the hospital imam alsadiq 55 male 45 female. Visual acuity of these patients before and after opening of the posterior capsule by Nd: yag laser. **Results:** the visual acuity of 100 patients **(**55 male 45 female**)** who have posterior capsule opacification is examine before and after the operation (opening of posterior capsule opacification by Nd-yag laser) which rang between 6/36 to 6/24 before operation to 6/12 to 6/9 after operation. After two weeks of follow-up the visual acuity in all patients was very good. **Conclusion:** Treatment of posterior capsule opacification by Nd: yag laser is proved to be is the most accurate and more safe way for management of these cases. it's an outpatient clinic operation takes less time and fees and patent can retain to work early.

Citation: Dr. Sundus Jasim Mohammed. 2018. "Posterior capsulotomy by 1064nm q- switched nd: yag laser", *International Journal of Development Research*, 8, (12), 24646-24649.

INTRODUCTION

Cataract is any cloudiness or opacity of the lens of the eye that cause decrease or drop in the vision (Jack, 2007). Cataract developed when there is change and collect in the protein inside the lens so it makes it cloudy, this prevent light from passing through the lens and causing loss in the vision. Cataract usually form slowly and progress until the patient notice decrease in vision that cloudy, blurry, changes in the way of color vision, problem at night driving and sometime double vision (Jack, 2007 and William Tasman, 1995). Cataract can be age related (most common type), congenital, secondary and traumatic. Cataract can be diagnosed by visual acuity detection and by examination of the eye with ophthalmological device and by B-ultrasound (Jack, 2007; William Tasman, 1995; Norman Siddiqui, 2001). Cataract can be treated surgically either by phacoemulsification or extra capsular Cataract extraction. Posterior capsular opacification is a fairly common complication of Cataract surgery (Jack, 2007; Norman Siddiqui, 2001 and Forman, 1990).

Corresponding author:* **Dr. Sundus Jasim Mohammed
Department Of Opthalmology, Madenet Al- Immamian Al- Kadymian Medical City

The thickening of the Posterior capsular can cause drop in vision and need to be treated by Nd: yag laser to improve the visual acuity of the patient (Forman, 1990; Richter, 1995 and Management of posterior capsule pacification the Royal College of ophthalmologists of London-Guidelines, 2001). The procedure to treat Posterior capsular opacification (PSO) by using Nd: yag laser which is a painless process and usually done in an outpatient clinic, and normally takes about 15 minutes (Jack, 2007; Norman Siddiqui, 2001; Richter, 1995 and Ranta, 2002). The ophthalmic YAG laser system YC-1800 employs pulse oscillation with Q- switch the system accumulates energy within the laser cavity switching, and, when sufficient, emits pulsed laser of high peak power extremely short duration by automatically making cell either transparent or opaque according to the accumulation of energy (Jack, 1995; Richter, 1995; Management of posterior capsule pacification the Royal College of ophthalmologists of London-Guidelines, 2001). The Nd: yag laser used in YC-1800 is an invisible infrared ray (wavelength: 1064 nm), red diode laser (wavelength: 635 nm) type is used for the aiming beam (Richter, 1985; Boca Raton; 1999), and Laser Safety Manual, 1998). Nd: yag laser may cause some complications like increase intraocular pressure, inflammation such as iritis,

keratitis, uveitis corneal edema, dislocation of intraocular lens, retinal detachment, macular edema (Aclarmonta Mesegure,(2015) ; Michael Drewsen, 2002; FDA Posterior Capsule Opacity Evaluation in IOP Clinical Studies, Sujjad Si Nasti, 1997).

PATIENT AND METHODS

100 patients attending (Al_Kadymia Hospital) during the period (2017 to 2018) in the month 1/11 to 1/4. Were the treatment of posterior capsule pacification by yag laser is done. The age of the patients ranged between 20 years to 80 years. The patient visual acuity (V.A) and IOP (for right and left eye), "Table 1" is taken before laser treatment of 100 cases is examined then follow-up the patient after surgery for vision extent of improvement in visual acuity through the process of yag laser.

Table 1. Patient according to the Gender and age and IOP (right & left eye)

P	Gender	Age(yaer)	IOP	
			R	L
1	Female	60	19	20
2	Male	50	10	5
3	Male	54	42	16
4	Male	66	13	20
5	Male	49	22	28
6	Male	31	17	17
7	Male	69	8	13
8	Male	42	14	13
9	Male	40	18	11
10	Male	60	16	18
11	Female	50	20	18
12	Male	50	17	15
13	Female	36	22	24
14	Male	36	18	18
15	Male	38	24	20
16	Male	64	11	11
17	Male	47	13	12
18	Male	65	14	14
19	Male	65	20	18
20	Female	38	25	40
21	Female	70	26	26
22	Male	57	24	64
23	Male	23	16	20
24	Female	55	11	26
25	Female	60	16	14
26	Female	50	19	20
27	Male	70	10	5
28	Male	25	42	16
29	Male	77	13	20
30	Male	52	22	28
31	Male	64	17	17
32	Male	57	8	13
33	Male	59	14	13
34	Male	55	18	11
35	Male	64	16	18
36	Female	25	20	18
37	Male	57	17	15
38	Female	55	22	24
39	Male	56	18	18
40	Male	55	24	20
41	Male	77	11	11
42	Male	47	13	12
43	Male	65	14	14
45	Male	65	20	18
46	Female	38	25	40
47	Female	70	26	26
48	Male	57	24	64
49	Male	23	16	20
50	Female	55	11	26
51	female	60	19	20
52	male	50	10	5
53	female	54	42	16
54	male	66	13	20
55	female	49	22	28
56	male	31	17	17
57	male	69	8	13
58	male	42	14	13
59	female	40	18	11
60	female	60	16	18
61	male	50	20	18
62	female	50	17	15
63	male	36	22	24
64	male	36	18	18
65	female	38	24	20
66	female	64	11	11
67	male	47	13	12
68	female	65	14	14
69	male	65	20	18
70	Female	38	25	40
71	Female	70	26	26
72	male	57	24	64
73	male	23	16	20
74	female	55	11	26
75	male	60	16	14
76	female	50	19	20
77	male	70	10	5
78	female	25	42	16
79	male	77	13	20
80	male	52	22	28
81	female	64	17	17
82	female	57	8	13
83	male	59	14	13
84	male	55	18	11
85	female	64	16	18
86	male	25	20	18
87	male	57	17	15
88	female	55	22	24
89	male	56	18	18
90	male	55	24	20
91	female	77	11	11
92	male	47	13	12
93	female	65	14	14
94	male	65	20	18
95	female	38	25	40
96	female	70	26	26
97	male	57	24	64
98	male	23	16	20
99	female	55	11	26
100	male	57	24	64

RESULTS

100 patients attending (Al_Kadomea Hospital) during the period (2017 to 2018) in the month 1/11 to 1/4. The visual acuity to the patient before surgical it 6/24 will improvement 6/12 _ 6/9 and the visual acuity patient before surgical it 6/36 will improvement 6/24 _6/18 and the visual acuity to the patient before surgical it 6/60 will improvement 6/36 _ 6/18.

Table 2. V. A before and after treatment by Nd:Yag laser according age and gender

N	gender	age	V.A before	V.A after
1	male	45	6/36	6/24
2	female	39	6/36	6/18
3	male	47	6/36	6/36
4	male	44	6/24	6/9
5	female	35	6/60	6/36
6	female	50	6/24	6/9
7	male	44	6/24	6/12
8	male	30	6/36	6/36
9	female	39	6/36	6/24
10	male	44	6/26	6/9
11	male	47	6/60	6/36
12	female	36	6/24	6/18
13	male	33	6/24	6/12
14	male	44	6/24	6/9
15	female	35	6/60	6/36
16	female	45	6/24	6/9
17	male	38	6/24	6/18
18	female	47	6/36	6/24
19	female	35	6/60	6/36

20	male	33	6/36	6/24
21	male	40	6/36	6/24
22	female	36	6/24	6/18
23	male	40	6/24	6/18
24	female	56	6/60	6/36
25	female	33	6/24	6/18
26	female	45	6/24	6/9
27	male	30	6/36	6/36
28	female	22	6/24	6/9
29	male	44	6/36	6/24
30	female	55	6/24	6/18
31	male	45	6/36	6/24
32	female	39	6/36	6/18
33	male	47	6/36	6/36
34	female	20	6/36	6/24
35	male	34	6/60	6/36
36	male	45	6/36	6/24
37	female	30	6/24	6/9
38	male	46	6/24	6/18
39	male	26	6/60	6/36
40	female	57	6/36	6/24
41	Female	20	6/24	6/9
42	male	35	6/24	6/18
43	male	27	6/24	6/18
44	male	30	6/36	6/18
45	female	57	6/36	6/12
46	Male	44	6/36	6/24
47	Male	38	6/24	6/9
48	Female	76	6/36	6/24
49	Female	59	6/60	6/24
50	Male	30	6/24	6/18
51	Female	24	6/60	6/18
52	male	49	6/36	6/24
53	female	66	6/24	6/9
54	female	62	6/60	6/36
55	Male	44	6/24	6/18
56	Male	54	6/24	6/9
57	male	29	6/60	6/36
58	female	38	6/24	6/9
59	female	20	6/36	6/24
60	female	20	6/36	6/24
61	Male	45	6/36	6/24
62	Female	65	6/24	6/9
63	Male	26	6/24	6/8
64	female	73	6/60	6/36
65	Female	44	6/36	6/24
66	Male	37	6/24	6/18
67	Female	27	6/60	6/9
68	Male	39	6/24	6/12
69	Female	66	6/60	6/36
70	Female	20	6/24	6/18
71	Male	63	6/36	6/24
72	Male	74	6/24	6/9
73	Female	28	6/24	6/18
74	Male	44	6/36	6/24
75	Female	26	6/60	6/36
76	Male	56	6/36	6/24
77	female	33	6/24	6/9
78	Male	20	6/24	6/18
79	Male	65	6/60	6/36
80	Female	34	6/24	6/18
81	Female	24	6/60	6/36
82	Male	30	6/36	6/24
83	Male	45	6/24	6/9
84	Female	33	6/24	6/18
85	Male	58	6/60	6/36
86	Male	26	6/36	6/24
87	Female	47	6/24	6/18
88	Male	23	6/36	6/24
89	Male	44	6/24	6/18
90	Male	30	6/24	6/9
91	Female	56	6/60	6/36
92	Male	56	6/24	6/18
93	Female	44	6/36	6/24
94	Male	28	6/24	6/18
95	Female	56	6/36	6/24
96	Female	26	6/24	6/9
97	Male	53	6/60	6/36
98	Male	44	6/24	6/18
99	Female	67	6/24	6/9
100	male	30	6/36	6/24

DISCUSSION

In this work the following were found:

- There is very high and good improvement in the visual acuity (90%) after Nd:YAG laser capsulotomy treatment with no complication was found.
- The improvement in the visual function more than two lines.
- Nd:YAG laser capsulotomy treatment is nearly safe, painless and an outpatient procedure with less time needed the hospital and less cost.
- The posterior capsulotomy by Nd:YAG (1064nm) laser in these cases is very recommended and very satisfied and it's a standard technique used in the treatment of posterior capsule opacification "PCO" as it's easy and safe procedure, with good results.
- The Nd:YAG laser capsulotomy results are very good and with no complications especially if it used carefully with indicated cases and by trained physician.

Conclusion

- The posterior capsulotomy by Nd:YAG (1064nm) laser in these cases is very recommended and very satisfied and it's a standard technique used in the treatment of posterior capsule opacification "PCO" as it's easy and safe procedure, with good results and The improvement in the visual function more than two lines.
- The Nd:YAG laser capsulotomy results are very good and with no complications especially if it used carefully with indicated cases and by trained physician and There is very high and good improvement in the visual acuity (90%) after Nd:YAG laser capsulotomy treatment with no complication was found.

Recommendation

In the future, a study of treatment of posterior capsule opacification with relation to:

1. To the type of thickness of posterior capsule opacification (thin, thick and very thick).
2. Type of IOL (intra ocular lens implantation) used.
3. The period of follow up of patient can be long than tow weeks to see if there are long-term complications after Nd:YAG laser capsulotomy.

REFERENCES

Aclarmonta Mesegure PJ, 2015. Relationship between 'PCO' and inflammation after ECCE (Abstract).

Boca Raton, 1999. FL Laser Safety Manual.

Chaudhary Macular hole fallowing YAG capulotomy *Br.J Ophthalmol* 1999; 83:753(June).

Discussion Paper by FDA Posterior Capsule Opacity Evaluation in IOP Clinical Studies.

Forman S. & J.Apisson Late-onset elevation in intraocular pressure after neodymium-YAG laser posterior capsulotomy Jarcheves of ophthalmology 1990 April.

Jack J.kaniski MD,Ms,FRco clinical ophthalmology Butterworth Heinemann Ltd London 2007 3rd Edition.

Laser Safety Manual 1998.

Management of posterior capsule pacification the Royal College of ophthalmologists of London-Guidelines 2001 February.

Michael Drewsen Notes on Laser Hazards 2002 April.

Norman Siddiqui, MD How to perform Nd:YAG capsulotomy Eye Net Mages 2001 August.

Ranta P.,Kivela T Retinal Detachment after Nd:YAG laser capsulotomy J.Cataract Refrative surgery 20020Nov.

Richter CU, Arson G, Pappas, intraocular pressure elevation following ND:YAG laser posterior capsulotomy *J ophthalmology* 1995 May.

Richter CU, Arzono G,Pappas HR, Intraocular pressure elevation following Nd:YAG laser posterior capsulotomy *J. Ophthalmology.,* 1985 May 92(5) 636_40 (Abstract).

Roger, F. Steinert MD, Cataract surgery Technique, complication & Management W.B. Saunders Company Philadelphia 1995 (356_360).

Sujjad Si Nasti A.R. Ahmed B Nd:YAG laser for posterior capsulotomy JK practitioner . 1997 Jul_Sep,4(3)180-1 (Abstract)

William Tasman, MD Duane's Foundation of Clinical ophthalmology Lippincott Company Philadelphia 1995 c.D Room Edition.

****