ORIGINAL ARTICLE

EVALUATION OF VISUAL OUTCOME OF CATARACT SURGERY IN RURAL EYE-CAMPS IN THE STATE OF MAHARASHTRA

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ABSTRACT

Aim: The present study was conducted to evaluate patients' satisfaction and success of cataract surgery.

Methods: This population based retrospective study included 1000 patients .Out of which 500 were operated in surgical camp and remaining 500 were operated in "Pdm. Dr. D. Y. Patil Medical College Hospital and Research Centre, Pimpri, Pune in institution setup from July to December 2013.The study was conducted at a number of camps held in peripheral north Maharashtra .Evaluation of visual acuity and patients satisfaction with scheduled porforma was done. Statistical analysis was performed with the help of cataract monitoring outcome software developed by International Centre for Eye Health, London School of Hygiene and Tropical Medicinefor evaluation of genderdifference, visual acuity, complications and patients satisfaction.

Result: In camp, 71.60% female and 28.40% male patients operated. And in base hospital, 58.40% male and 41.60% female were operated..Post operative.Visual acuity of 6/6 in base hospital was 90.4% and in camp was 69.2%. Number of visits in base hospital was 81.6% and in camp was 43% due to lack of post operative follow-ups cause of absence of transportation coupled with socio-economic background..Thepost operative-complication rate and patients satisfaction in base hospital was 9.6% and 83% respectively and .In camp was 30% and58.6 % respectively.

Conclusion: Camp services should be at same location of base hospital with good transportation that helps to make doctor- patient bonding and improve visual outcome. Involvement of the local community leaders may provide an improved alternative.

Key words: Cataract, Visual acuity ,patient satisfaction

INTRODUCTION

WHO defines cataract as "clouding of the crystalline lens of the eye which prevents clear vision". Cataract is the leading cause of unavoidable blindness worldwide .[1] Epidemiologic models estimated that more than 20 million people in the world are blind from cataract and with increased life expectancy; it is projected that this will increase to 50 million by 2020.[2] Eye camps in rural areas provide inexpensive surgery to poor patients. The results of surgery in eye camps are often not evaluated and the role of IOL implantation under camp has been questioned. Rural eye camps are able to provide a cost- effective .Several patients did not visit and not taken post operative care which leads to complications after surgery.

The two models of this study were discussed in the rural Maharashtra especially the backward regions such as Vidarbha.[9] These models were complimentary and proposed to work in conjunction. Repetitive eye-camps with the same set of professionals also provide an emotional integration of the patients with their doctors, thereby giving better result with cataract related complications of the rural poor. The patients already suffering with systemic diseases and having a very low pre-operative visual acuity are proposed to be separated and provided differential treatment at the base hospital. It will reduce percentage of post-operative complications and would lead to better acceptability of the camp operated model. The "Vision 2020: Right to Sight" initiative, calls upon us to take initiative to achieve the goals of right to sight for all. With this background in mind, the present study was undertaken with a hypothesis that a viable solution for cataract afflicted rural populace can be provided by improvising and improving the models of camps being organised for cataract surgeries.

Aims & Objective: To evaluate patients satisfaction and visual outcome after cataract surgery in rural surgical camp and institutional level. Objective of this study is a right to sight and to eliminate avoidable blindness by 2020. The burden of blindness has an enormous personal, social and economic impact, limiting the educational potential and quality of life of otherwise healthy people, and producing a severe drain on family, community, social and health services. Blindness is also associated with lower life expectancy .[13]

METHODOLOGY

Study Site and Context: The population-based retrospective study was conducted at camps held in peripheral north area of Maharashtra. The field study was also extended to the OPD of the base hospital at Pdm. Dr. D. Y. Patil Medical College Hospital and Research Centre, Pimpri, Pune. The study included 1000 patients (500 camp-operated and 500 base hospital operated) and were examined in period of July to December 2013. Patients above 40 years suffering from age-related cataract who have undergone cataract surgery in past 3 years were included. The success of cataract surgery is assessed by visual acuity 6-8 weeks post-operatively. The world health organisation recommends that at least 90% of patients have a good outcome (i.e., corrected distance visual acuity [CDVA] > 6/18) after cataract surgery and that a poor outcome (CDVA < 6/60) be limited to 5% of cases.[14]

Inclusion criteria- Patients suffering from age-related cataract who have undergone cataract surgery in past 3 years Patients from rural areas, who have been selected by government/NGOs through camps for free surgery.Walk-in patients' suffering from cataract attending the tertiary care centre in a private medical college and eventually operated.

Exclusion criteria: Patients having pre-existing corneal opacity, pseudoexfoliation, uveitis etc.

Ethical committee approval was taken.

Data collection procedures: manually, with the help of a Performa. Procedure for examination of visual acuity: Visual acuity in each eye was tested with Snellen's chart and Landolt C chart (distant vision), Jaeger's chart (for near vision).[15] Procedure for corneal examination with the help of Binocular loop and torch examination was done to exclude a corneal abrasion or corneal xerosis. [15] Fundus examinations done under pupillary dilatation with use of Beta Heinz direct ophthalmoscope when light is shown in one eye, both the pupils constrict. Constriction of the pupil to which light is shown, is called direct light reflex; and that of the other pupil, is called consensual or indirect light reflex.[16] Collected data has been evaluated with the help of cataract monitoring outcome software developed by International Centre for Eye Health, London School of Hygiene and Tropical Medicine.[17]

RESULTS

In camp, 71.60% female and 28.40% male patients operated. And in base hospital, 58.40% male and 41.60% female were operated as shown in table 1.

Table1: Male-Female percentage Camp operated and Base operated patients

Gender	Camp operated (%)	Base operated (%)
Male	142(28.40)	292(58.40)
Female	358(71.60)	208 (41.60)
Total	500 (100)	500 (100)

Table 2: Visual Acuity in postoperative patients

Visual Acuity	Base Hospital	Camp Operated
PL-	0	13
PL+	0	0
1/60	0	0
3/60	0	0
3/60-6/60	3	22
6/60	0	0
6/36	0	14
6/24	0	0
6/24-6/18	11	47
6/18	34	58
6/12	0	0
6/9	0	0
6/6	452	346

Table 3: Post-operative follow-up

Visits	Base Hospital (%)	Camp operated (%)
1	457(91.4)	426(85.2)
2	431(86.2)	402(80.4)
3	411(82.2)	351((70.2)
4	408(81.6)	215 (43.0)

Table 4: Post-Operative Cataract Complications

Post-operative cat-Aract complications	Base- Hospital (%)	Camp- operated (%)
Corneal Haze	34 (6.8)	58 (11.6)
Wound Leak	0 (0.0)	14 (2.8)
Vitreous Loss	3 (0.6)	22 (4.4)
Endophthalmitis	0 (0.0)	13 (2.6)
TASS	11 (2.2)	47 (9.4)

Table 5: Satisfaction to Surgery

Satisfaction to Surgery	Base Hospital (%)	Camp Operated (%)
Satisfied	415 (83.00)	293 (58.60)
Average Satisfaction	57 (11.40)	75 (15.00)
Not Satisfied	28 (5.60)	132 (26.40)
Total	500 (100)	500 (100)

Table 2 shows Post operative Visual acuity of 6/6 in base hospital was 90.4% and in camp was 69.2%.

As shown in Table 3 Number of visits in base hospital was 81.6% and in camp was 43% it due to lack of post operative follow-ups cause of absence of transportation coupled with socio-economic background. Definitely no of visits of patients are more in base operated patients.

Table no 4 describes the patient satisfaction after surgery.

Analysis of the satisfaction level of camp- operated and base-operated patients after a period of 4-6 weeks shows a higher level of satisfaction for the latter. The patients having systemic diseases diagnosed out of routine screening are transferred to the base hospital for improved management for avoiding incidence of intra & post-operative complication.

Table no 5 describes postoperative complication incidence of endophthalmitis is high in camp operated patients.

DISCUSSION

Cataract is the leading cause of blindness in India**.** The male patients are taken care of and transported to improved health care centres such as the base hospital in our case, whereas the female patients belonging to the same group have to depend largely on the free health camps organised nearer to their dwellings.

In our study, 71.60% female and 28.40% male were operated in camp while , 41.60% female and 58.40% male were operated in base hospital. Similar results were seen in a study conducted by as of our study undertaken by Gogate Pet al al at a base hospital and outreach camps in the rural areas in Maharashtra.[10] As per this study, 59.1% female patients were operated at camp and 48% were operated at hospital. The study undertaken by Kapoor H et al similar with our study as efficacy of eye camps can be improved by repeat camp at the same venue, was evaluation of visual outcome of cataract surgery in an Indian eye-camp.[3] In another study of Nowak R et al on outcome of an outreach microsurgical project in Nepal ,compare with our study with application of appropriate surgical techniques and standard protocols at camp level.[4] Another similarity with our study was conducted by Murthy G V et al the better visual acuity levels achieved in base hospitals as compared to camp operated cataract patients.[5] Our proposed model acquires significance as it will lead to improved visual acuity, satisfaction and surgical care to the rural population especially the females near their community living.

One study done by Finger RP at al highlightened the importance of providers building trust by organizing regular outreach in the same location.[6] A study was done by Pai SG at alin which patient were screened in camp and transported to base hospital for low rate of intraoperative complications.[7] A study done by Jagat Ram at al ,found that follow up in camp operated children declined gradually.[8] A other study was done by Reddy A et al found that outcome for the eyecamp operated patients was almost similar with patients operated in hospital.[9] One study was done by Gogate P et al l found that postoperative follow up at base hospital was very poor.[10]

A study undertaken by R Anand,et al in Chandigarh on visual outcome following cataract surgery in rural Punjab had similar outcome to our study.[11] One study done by Rushoo A et al found that large scale operations were held in rural area due to intensive volunteer cataract programs.[12] In above mentioned studies result were similar with our study. The results thrown up by us findings show a wide gap between the qualitative results achieved between the two sets (camp and base hospital) of medical services. As similar set of professionals performed these services, the results were expected to be similar. This throws up another challenge to find out ways and means to improve the qualitative results of the camp operated cataract patients. Perhaps, the two models proposed by us may provide a lasting solution.

Model 1: "On site repetitive eye-camps at the same location, with the same set of medical professionals (especially the surgeon) using standardised techniques and acceptable level of sterilisation." The advantage of such a model is to provide a qualitative and consistent post-operative care by the same set of medical professionals who operated the patients in the camp. While comparing the results of the camp operated patients with those of well-equipped hospitals, a major difference which was observed was that in a hospital condition normally the post operative care is carried out by the same medical professionals, whereas follow-up in a camp may or may not be done by the same professionals. This was also found to be one of the major reasons for the patients not coming forward for post operative care in camp conditions and also better results with consistency in operations carried out at hospitals. Repetitive eye-camps with the same set of professionals also provide an emotional integration of the patients with their doctors, thereby giving better results.

Model 2: "Patients identified after screening at camps, suffering from systemic diseases, are proposed to be referred to base hospitals for surgery and follow-up. Transportation from the camp to the base hospital and back to their respective places post-surgery, with provision of regular transportation for follow-up minimises post-operative complications."

The two models are complimentary and proposed to

work in conjunction, to provide aholistic solution to the problems associated with cataract related complications of the rural poor. The patients already suffering with systemic diseases and having a very low preoperative visual acuity are proposed to be separated and provided differential treatment at the base hospital. It will reduce percentage of post-operative complications and would lead to better acceptability of the camp operated model.

Another interesting aspect , though not related directly to our study is the level of ignorance and superstition that afflicts the rural populace, especially the poor, the aged and the female, resulting in acceptance of cataract related diseases as a fate and not making enough attempts to attend the especially organised rural camps for getting proper medical treatment at the appropriate time. This also results in post operative complications.

CONCLUSION

During our study we come to the conclusion considering the socio-economic and gender specific importance of the camp operated cataract services. In most of the studies it has been established beyond doubt that the management of incidence of cataract in the Indian subcontinent in general and rural Maharashtra in particular cannot be carried out without the camps being organised especially for this purpose. However, as discussed earlier, the results thrown up by our findings show a wide gap between the qualitative results achieved between the two sets (camp and base hospital) of medical services. As similar set of professionals performed these services, the results were expected to be similar. This throws up another challenge to find out ways and means to improve the qualitative results of the camp operated cataract patients. To improve the techniques at the camp and providing repeat services at the same location and involvement of the local community leaders may provide an improved alternative.

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