Original Article

A study of various complications and factors associated with primary trabeculectomy

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Abstract

Introduction: Trabeculectomy has historically been the surgical standard of care for patients with medically refractory glaucoma. **Aims and Objective:** To Study various complications and factors associated with primary trabeculectomy. **Methodology:** This was retrospective cross-sectional study in the Ophthalmology department of tertiary health care center. 112 Patients who had undergone primary trabeculectomy operation in the Glaucoma during the three-year period i.e. from January 2012 to December 2014 were included in the study. The record of the patients involved were scrutinized for follow up, complications and demographic characters **Result:** The majority of the Patients were in the age group of 50-60 i.e. 34.82% followed by 40-50 were 28.57%; in 30-40 were 15.17%; in >60 were 13.39% and in 20-30 were 8.03%. The majority of the Patients were male i.e. 58.03 % and Females were 41.96%. The most common complications were Hyphema in 25% followed by Bleb leak in 19.44%; Hypotony in 13.88%; Microhyphema in 11.11%; Choroidal effusion in 8.33% ; Endophthalmitis in 8.33%; Choroidal hemorrhage in 5.55%; Blebitis in 5.55%; Aqueous misdirection in 3.57%. The majority of the patients with the complications associated with the risk factors were Glaucoma with pigment dispersion syndrome (PDS) were 36.11% followed by H/o Diabetes in 19.44%; H/o Hypertension in 13.88% ; Pseudo phakia with Tenons Cyst in 11.11% in Old age 8.33%. **Conclusion:** It can be concluded from our study that the most common complications were Hyphema followed by Bleb leak, Hypotony, Microhyphema, Choroidal effusion, Endophthalmitis, Choroidal hemorrhage, Blebitis, Aqueous misdirection, the majority of the patients with the complications associated with the risk factors were Glaucoma with PDS were followed by H/o Diabetes, H/o Hypertension, Pseudo phakia with Tenons Cyst, and Old age.

Keywords: Primarytrabeculectomy, Pseudophakia, TenonsCyst, PDS (pigment dispersion syndrome).

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INTRODUCTION

Trabeculectomy has historically been the surgical standard of care for patients with medically refractory glaucoma.[15] The number of trabeculectomies performed during the past 15 years has declined. The explanation for this decline is likely multifactorial, including an increase in medical management with additional topical agents, concern about trabeculectomy-related complications, and an increase in the use of minimally invasive glaucoma procedures and glaucoma drainage devices. The Medicare claims from 1995 through 2004 indicated a 53% decrease in the number of trabeculectomies and a concomitant 184% increase in tube-shunt procedures.[6]. The Medicare data likely included a glaucoma filtration device (ExPress; Alcon) as a tube shunt because of initial coding errors when the device was introduced. The downward trend of trabeculectomy was also supported by a survey of members of the American Glaucoma Society[7,8].

MATERIAL AND METHODS

This was cross-sectional study in the Ophthalmology department of tertiary health care center in the Patients who had undergone primary trabeculectomy operation in the Patients with Glaucoma during the three-year period i.e. from January 2012 to December 2014 there were 112 undergone operation for primary trabeculectomy. The

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record of the Patients included follow up and complications, demographic characters etc.

RESULTS

Table 1: Distribution of the Patients as per the Age

Age	No.	Percentage (%)
20-30	9	8.03
30-40	17	15.17
40-50	32	28.57
50-60	39	34.82
>60	15	13.39
Total	**112**	**100**

The majority of the Patients were in the age group of were 50-60 i.e. 34.82% followed by 40-50 were 28.57%; in 30-40 were 15.17% ; in >60 were 13.39% and in 20-30 were 8.03%.

Table 2: Distribution of the Patients as per sex

Sex	No.	Percentage (%)
Male	65	58.03
Female	47	41.96
Total	**112**	**100**

The majority of the Patients were male i.e. 58.03 % and Females were 41.96%.

Table 3: Distribution of the Patients as per various complications

Complications	No.	Percentage (%)
Hyphema	9	25%
Bleb leak	7	19.44%
Hypotony	5	13.88%
Microhyphema	4	11.11%
Choroidal effusion	3	8.33%
Endophthalmitis	3	8.33%
Choroidal hemorrhage	2	5.55%
Blebitis	2	5.55%
Aqueous misdirection	1	3.57%
Total	**36**	**100%**

The most common complications were Hyphema in 25% followed by Bleb leak in 19.44%; Hypotony in 13.88%; Microhyphema in 11.11%; Choroidal effusion in 8.33%; Endophthalmitis in 8.33%; Choroidal hemorrhage in 5.55%; Blebitis in 5.55%; Aqueous misdirection in 3.57%.

Table 4: Associated risk factors for the Complications

Risk Factors	No.	Percentage (%)
Glaucoma with PDS (pigment dispersion syndrome)	13	36.11%
H/o Diabetes	7	19.44%
H/o Hypertension	5	13.88%
Pseudo phakia with Tenons Cyst	4	11.11%
Old age	3	8.33%
Total	**36**	**100%**

The majority of the patients with the complications associated with the risk factors were Glaucoma with PDS were 36.11% followed by H/o Diabetes in19.44%; H/o Hypertension in 13.88%; Pseudo phakia with Tenons Cyst in 11.11%and in Old age 8.33%.

DISCUSSION

In the early days of trabeculectomy, several authors focused on the favorable pressure-reducing effect of the operation. For example, in their 10-year study of 424 eyes, Watson and Grierson reported success in 86% of eyes with surgery alone and in 98% with the use of additional medical therapy and/or surgery after the minimum follow-up period of 2years.[9]D'Ermo etal. reported success in 71% of eyes without medication and in 80% of those with medication after1-5year of follow-up, and noted that after this period the percentage of well-controlled eyes was substantially constant up to 5years.[10]Clinical experience and other studies have, however, shown lower success figures and have suggested that the success rate of trabeculectomy decreases with time. Jerndal and Lundstromreported IOP≤21mmHg without medication in 58% of eyes after a follow-up period of 1.5–3years.[11]Even lower control rates have been reported recently. Nouri-Mahdavi *et al*. identified success rates of 48% and 40% at 3 and 5years, respectively, although it should be noted that their study defined success by the achievement of either IOP≤20mmHg or a pressure reduction of 20%.[12.]

In our study, we found thatthe majority of the patients were in the age group of 50-60 i.e. 34.82% followed by 40-50 were 28.57%; in 30-40 were 15.17%; in >60 were 13.39% and in 20-30 were 8.03%. The majority of the Patients were male i.e. 58.03 % and Females were 41.96%.

Also the most common complications were Hyphema in 25% followed by Bleb leak in 19.44% ;Hypotony in 13.88%; Microhyphema in 11.11% ; Choroidal effusion in 8.33% ; Endophthalmitis in 8.33%; Choroidal hemorrhage in 5.55%; Blebitis in 5.55%; Aqueous misdirection in 3.57%. This was similar to Other studies. [10,13]

Also the risk factors associated with the complications were The majority of the patients with the complications associated with the risk factors were Glaucoma with PDS were 36.11% followed by H/o Diabetes in 19.44% ; H/o Hypertension in 13.88% ; Pseudo phakia with Tenons Cyst in11.11% in Old age 8.33%. this was similar to Koller TL[13] they found Pseudophakia and an encapsulated bleb are the main risk factors for complication and hence the subsequent surgical failure.

CONCLUSION

It can be concluded from our study that the most common complications were Hyphema followed by Bleb leak, Hypotony in, Microhyphema, Choroidal effusion, Endophthalmitis, Choroidal hemorrhage, Blebitis, Aqueous misdirection, the majority of the patients with the complications associated with the risk factors were Glaucoma with PDS were followed by H/o Diabetes, H/o Hypertension, Pseudo phakia with Tenons Cyst, and Old age.

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