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Manuscript title:

Combined Nasal Goniotomy-Temporal Trabeculotomy versus Temporal Trabeculotomy for Management of Primary Congenital Glaucoma

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Abstract

Purpose: To compare the clinical outcomes of combined nasal goniotomy-temporal trabeculotomy versus sole temporal trabeculotomy in patients with primary congenital glaucoma.

Material& Methods: this prospective randomized double-arm study involved 36 eyes of 21 primary congenital glaucoma patients. Group 1 (18 eyes) underwent combined nasal goniotomy-temporal trabeculotomy, targeting approximately 90° of the nasal angle via goniotomy and 120° via temporal trabeculotomy. Group 2 (18 eyes) underwent temporal trabeculotomy alone. Primary outcomes included intraocular pressure (IOP) reduction, success rates, and surgical complications over a 12-month follow-up.

Results: Both groups showed significant postoperative intraocular pressure reduction ($p < 0.05$). At one year, the mean IOP was 11.22± 2.96 mmHg in Group 1 and 12.5±3.82 mmHg in Group 2. The complete success rate was higher in the nasal goniotomy-temporal trabeculotomy group (72.2%) compared to the

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trabeculotomy group (61.1%), though the difference was not statistically significant ($p > 0.05$). Transient hyphema was the most common complication (22% in Group 1). Notably, NGTT preserved the superior conjunctiva for potential future filtering surgeries.

Keywords: Glaucoma, Congenital, Trabeculotomy, Goniotomy

Data analysis was performed using the software SPSS (Statistical Package for the Social Sciences) version 27. Categorical variables were described using their absolute frequencies and were compared using the chi-square test and Fisher's exact test when appropriate. To compare ordinal data between two groups, the chi-square for trend test was used. The Shapiro-Wilk test was used to verify assumptions for use in parametric tests. Quantitative variables were described using their means and standard deviations or median and interquartile range according to the type of data. To compare quantitative data between two groups, the independent sample t-test (for normally distributed data) and the Mann-Whitney test (for not normally distributed data) were used. To compare the change in one variable over two points of time within the same group, the Wilcoxon signed rank test (for not normally distributed data and qualitative data), and the Paired sample t test (for normally distributed data) were used. The level of statistical significance was set at $P<0.05$. A highly significant difference was present if $p\leq0.001$.

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