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Impact of Wendler glottoplasty on acoustic measures and quality of voice in transgender women: a systematic review and meta-analysis

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ADMINISTRATIVE INFORMATION

Support - None.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 13 October 2023 and was last updated on 13 October 2023.

INTRODUCTION

Review question / Objective The purpose of the present study was to systematically review the literature and meta-analyze the existing data to determine the efficacy and safety of Wendler glottoplasty (WG) in the voice feminization in transgender women.

Condition being studied Male-to-female transsexualism.

METHODS

Participant or population Male-to-female transgender people who underwent WG in order to feminize their voice.

Intervention The evaluation of details of the surgical technique and perioperative care, eventual postoperative complications, as well as pre- and postoperative acoustic and aerodynamic

parameters of the voice, perceptual measures of the voice, and voice-related quality of life scales scores.

Comparator Not applicable.

Study designs to be included Non-randomized prospective and retrospective studies.

Eligibility criteria (1) Inclusion criteria: English-language full-text papers, qualitatively and/or quantitatively evaluating the impact of WG on acoustic measures, aerodynamic parameters, and/or on perceptual analysis of the voice of transgender women. (2) Exclusion criteria: publications with an unrelated topic, conference papers, review articles, case reports, commentaries, technical notes, and letters to the editor.

Information sources The PubMed, Embase, and Cochrane databases were searched by two authors independently for English-language full-

text papers published from inception until July 4, 2023.. Additionally, the reference lists in all preselected articles were screened for further relevant papers. Any discrepancies between the researchers were discussed, until a consensus was reached.

Main outcome(s) Changes in acoustic-aerodynamic parameters of the voice and, and voice-related quality of life scales scores following WG in transgender women.

Quality assessment / Risk of bias analysis Two reviewers independently assessed the quality of the eligible studies according to the Newcastle Ottawa Scale. Any discrepancies between the reviewers were resolved through discussion until a consensus was reached.

Strategy of data synthesis Statistical heterogeneity was assessed using the I² test. The results of the I² test were analyzed according to the following heterogeneity classification: 0%-25%, low heterogeneity; 26%-50%, moderate heterogeneity; >50%, high level of heterogeneity. The results were considered statistically significant at $p < 0,05$. Publication bias was evaluated based on the observation of visual asymmetry in the funnel plot analysis. In case of variables, for which a meta-analysis was performed, the mean difference was calculated with a 95% confidence interval (CI). For other variables, the differences were analyzed using the t test, when possible. The analysis was performed using the PQStat v.1.8.6 package (PQStat Software, Poznań, Poland).

Subgroup analysis The evaluation of differences in various acoustic-aerodynamic parameters of the voice and voice-related quality of life scale scores between the pre- and postoperative period.

Sensitivity analysis Not applicable.

Language restriction English.

Country(ies) involved Poland.

Keywords transgender; phonosurgery; voice feminization; pitch elevation; acoustic analysis; fundamental frequency.

Contributions of each author

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