**Supplemental Digital Content 2.**

**Primary Outcome Measures**

The V-RQOL is a patient reported measure which reflects the degree their quality of life is impaired by their voice.16  It has been validated in adductor spasmodic dysphonia following botulinum toxin treatment.18 It has a range from 0-100 with scores below 50 considered poor, 51-60 fair, 61-74 good, 75-85 very good, and above 85 excellent.

The USDRS is an objective measure of the severity of spasmodic dysphonia.17 The overall component of this score ranges from 0-7 (lower scores better) on a Likert scale. Patients were recorded reading a standard paragraph. The twenty-four recorded voice samples (six patients, each with four experimental settings: pre-operative, blinded-DBS ‘on’, blinded-DBS ‘off’, and open-DBS ‘on’) were randomized and presented to two speech language pathologists, blinded to the settings, for assessment and scoring. The two scores were then averaged to provide a final score.