BACKGROUND

- Dystonia encompasses a broad range of movements defined as sustained, patterned involuntary muscle contractions causing twisting and abnormal posture [1, 2].
- The sensory trick (ST), otherwise known as the geste antagoniste is a classic feature of most focal dystonias.
- This maneuver has traditionally been used to describe a light touch to an area of the body which improves the abnormal posture.
- There are few studies describing the phenomenology of sensory tricks primarily in cervical dystonia (CD) and blepharospasm [3, 4].
- However these studies were performed in a single center describing a small number of patients.

OBJECTIVES

- To determine the demographic and clinical differences between patients with and without ST, in a large multicenter cohort of patients with cervical dystonia (CD) enrolled in the Dystonia Coalition registry

METHODS

- This is an institutional review board approved retrospective study.

- We analyzed the data collected from 164 cervical dystonia patients enrolled in 9 sites in the Project 2 arm of the Dystonia Coalition project (http://clinicaltrials.gov/show/NCT01373424) by November 2012.

- CD with effective ST, defined as partial or complete improvement of the abnormal posture, were compared to CD patients without effective ST on demographic and neurologic features and psychiatric diagnoses.

- Details regarding localization and phenomenology of effective ST and degree of improvement were collected initial data collection:
  - Demographic variables
  - Global Dystonia Rating Scale (GDRS)
  - Tampa Western Spasmodic Torticollis Rating Scale (TWSTRS)

- Systematic review of standardized video examinations for descriptive details of ST:
  - Site and characteristics of ST
  - Degree effectiveness

- Analyses used t-test or exact Pearson chi-square tests (for nominal outcomes).

RESULTS

- Patients with ST had significantly higher GDRS total scores compared to patients who did not use ST (p=0.05).
- However, after adjustment for age, duration of dystonia and presence of psychiatric conditions using multiple linear regression analysis comparing the ST vs. non-ST group.
  - There was no significant difference in GDRS scores (p=0.13)
  - There was no significant difference in TWSTRS total scores (p=0.37).

- To our knowledge this is the largest cohort of patients describing the characteristic of STs that were systematically determined through clinical examination.
- Limitations to this study include:
  - Retrospective nature of data review
  - Variability in videotaped demonstrations of ST between centers.
  - The presence of improvement with “forceful touch” demonstrates that the ST benefits may also be present with motor input.
  - Our findings are similar to others in that the benefits of ST may be earlier in the course of the disease.
  - Abnormalities in proprioceptive, spatial and temporal sensory discrimination have been identified [5, 6].
  - In patients with CD a two-phase model in which abnormal head posture is first normalized by counter pressure or volitional antagonistic muscle activity after which the posture is stabilized by sensory input [7, 8].
  - The presence of the ST supports emerging theories that dystonia is a disorder of sensorimotor integration [9 - 11].

CONCLUSION

- This study demonstrates that the ST does not involve just “sensory” input and that it is effective rather than “fake” as implied by the word “trick.”
- We propose that a more appropriate term for this phenomenon is “alleviating maneuver” (AM) which could be either motor or sensory in nature.
- Future studies should be directed towards:
  - Further clarification of the pathophysiological mechanism of the AM
  - Therapeutic strategies that utilize the benefits of the AM

REFERENCES