**ABSTRACT**

Objective: To determine the clinical yield of neck and chest computed tomography in the initial assessment of patients with idiopathic unilateral true vocal fold paresis.

Study Design: Retrospective review.

Methods: A retrospective chart review of consecutive adult patients with idiopathic unilateral true vocal fold paresis diagnosed by stroboscopy in a tertiary-care voice center from 2003-2010.

Results: There were 176 patients with unilateral vocal fold paresis of which 81 subjects had idiopathic unilateral true vocal fold paresis. Of these, 60 patients (74.1%) had a computed tomography workup. 59 patients (98.3%) had a normal computed tomography while one patient had a single mediastinal lymph node that was PET-CT negative. This demonstrates an initial 1.7% yield and ultimate 0% yield of the computed tomography workup.

Conclusion: Our results suggest that computed tomography workup has a low yield for occult neck and mediastinal pathology in patients with idiopathic unilateral true vocal fold paresis. Chest and neck computed tomography may not be clinically beneficial provided the patient has good otolaryngologic and medical follow-up.

**INTRODUCTION**

- Although the yield of routine CT imaging in the initial assessment of idiopathic VF paralysis has been studied and well established, its role in idiopathic unilateral true VF paresis (IUVFP) is unknown and has not been specifically addressed in the medical literature.1,2
- The objective of this study is to determine the clinical yield of neck and chest CT in the initial assessment of patients with IUVFP in an effort to better define its role in management of the disease.

**MATERIALS AND METHODS**

- Retrospective chart review
- 8 years period (2003 - 2010)
- All consecutive adult patients diagnosed with IUVFP in our tertiary-care voice center
- Including:
  - Medical history
  - Physical examination
  - Neck and chest CT results
  - Laryngological and medical follow up.
- IUVFP definition: unilateral decreased mobility of the VF in varying degrees, secondary to presumed loss of function of the ipsilateral recurrent laryngeal nerve (RLN) or vagus nerve, without known etiology at the time of the diagnosis.
- The diagnosis was made according to:
  - Symptoms of glottal insufficiency
  - Videostroboscopic findings.
- Were excluded the cases with isolated superior laryngeal nerve injury.
- Main outcome: the prevalence of any neck or chest pathology that may explain a partial loss of function of the recurrent laryngeal or vagus nerves.
- Emory University IRB approval was obtained before the study period.

**RESULTS**

- Etiology Unilateral VF Paresis (176 patients)
  - Idiopathic
  - Post surgery
  - Intubation
  - CNS pathology
  - Miscellaneous
  - Malignancy

- Post Surgical Unilateral VF Paresis, % of unilateral VF paresis (n=46 patients)
  - Thyroidectomy 10.8% (19)
  - Spinal surgery 6.3% (11)
  - Cardiothoracic surgery 4.5% (8)
  - Carotid surgery 2.8% (5)
  - Parathyroidectomy 1.1% (2)
  - Zenker’s diverticulum open surgery 0.6% (1)

- Demographic data for IUVFP included on this study
  - CT group Non-CT group Total
  - N (%) 60 (74.1%) 21 (25.9%) 81 (100%)
  - Mean age y (SD) 56.8 (16.9) 56.0 (14.9) 56.6 (16.4)
  - Female 53.3% 42.9% 50.1%
  - Male 46.7% 57.1% 49.9%

- Neck and Chest CT Work Up
  - 25.9% 74.1%
  - 60 patients

- Single positive CT workup (1.7% yield)
  - However,
    - PET-CT was negative
    - Cardiothoracic surgery evaluation decided only follow up
  - Therefore, final CT workup had 0% yield

In the non CT group, there were no clinical manifestations of occult neck or mediastinal pathology after a mean medical follow up period of 20.1 months (range: 0-87 months).

**DISCUSSION**

- The IUVFP group was the most frequent with a 46% of the cases. We found a larger iatrogenic group than previous studies, 39.2% in contrast to 20%.3
- This study is the first to question the role of imaging studies in the initial assessment of IUVFP.
- In all patients who underwent CT workup, the information obtained from the neck and chest CT did not change their ultimate management. This gives us a final 0% diagnostic yield for CT workup, putting into question the need for CT imaging in this patient population.
- There were no clinical manifestations of occult neck or mediastinal pathology after a mean medical follow up of 20.1 months in the non-CT group.
- These results suggest that the CT workup on initial diagnosis of IUVFP may not be beneficial.
- A prospective, multi-centric study with a larger number of patients would reveal more information.

**CONCLUSIONS**

- The most common etiologies of unilateral vocal fold paresis were idiopathic, post-surgery, and post-intubation.
- Our results suggest:
  - CT workup has a very low yield for occult neck and mediastinal pathology in the evaluation of patients with IUVFP.
  - Chest and neck CT may not be clinically beneficial provided the patient has good otolaryngologic and medical follow-up.

**REFERENCES**