

# Dysphonia as the initial presenting symptom in post-polio syndrome: a case report

Tamar Ference\* & Joshua Cutler



## Introduction

Post-polio syndrome is a slowly progressive condition that affects polio survivor's years after their initial infection with polio virus. Individuals with post-polio syndrome suffer from a variety of symptoms that negatively impact their independence and overall happiness, including daily general fatigue (48-93%), pain (72-91%), respiratory issues (11-41%), depression (13.45%), and sleep disorders (13-48%) [1,2]. Here, we present a patient with post-polio syndrome who presents with an unusual symptom manifestation of hoarseness.

Otolaryngology examination revealed normal range of motion of vocal cords. Gastric causes of hoarseness were excluded. CT of the chest was negative. The speech pathologist concluded the hoarseness was due to fatigued abdominal muscles weakened from post-polio syndrome. Physical therapy for abdominal and core strengthening and speech therapy for energy conservation techniques were implemented with discernable improvement of voice function. An abdominal binder was prescribed to be worn throughout the day to support the abdominal and diaphragmatic musculature (FIGURE 1).

## Case presentation

The patient is a sixty-year-old male with post-polio syndrome who was evaluated in the outpatient rehabilitation post-polio clinic at a tertiary academic institution. The patient presented with a chief complaint of hoarse voice. The dysphonia led to a direct functional disability because the patient worked as a teacher and found it difficult to complete a full day of instruction. Because of the difficulty, he believed he would not be able to continue in this occupation.

There was a family history of vocal cord cancer and personal history of vocal cord polyp. The polio infection occurred in 1950 with significant residual weakness in his right leg requiring long term use of a KAFO with bilateral axillary crutches. He also had profound fatigue after more taxing days. The patient was congruently examined by the physiatrist, physical therapist, and orthotist.

## Discussion

This case represents an unusual symptom manifestation of hoarseness related to weakness in post-polio syndrome. Post-polio syndrome is a condition of late onset re-activation of weakness, pain, and fatigue in those with a history of polio. Of polio survivors, 22-68% develops post-polio syndrome. All persons who had polio of any severity are at risk of developing muscle weakness. People who suffered severe residual weakness after their initial polio infection are more likely to have more severe manifestations of post-polio syndrome with greater loss of muscle function [2]. There is currently no prevention or treatment that can reverse the affects of post-polio syndrome; the most effective interventions remain non-fatiguing exercise, energy conservation techniques and appropriate bracing or assistive devices though in some patients even minimal physical exercise may exacerbate post-polio symptoms, particularly fatigue.

**KEYWORDS**

- post-polio syndrome
- dysphonia



**Figure 1.** Subject with the abdominal binder.

**Conclusion**

In treating post-polio syndrome patients with hoarse voice a multidisciplinary team can help

maximize and preserve function. Weakness of the abdominal muscles, diaphragm, and laryngeal muscles should be considered in persons with history of polio.

**References**

1. McNalley TE, Yorkston KM, Jensen MP *et al.* A review of secondary health conditions in post-polio syndrome: prevalence and effects of aging. *Am. J Phys. Med. Rehabil.* 94(2), 139–145 (2015).
2. Burger H, Marcinck C. The influence of post-polio syndrome on independence and life satisfaction. *Disability. Rehabil.* 22(7), 318–322 (2000).