Psychogenic Habit Cough: Review and Case Reports

Martha Gay, M.D., Florence Blager, Ph.D., Kathy Bartsch, L.S.W. II, Charles F. Emery, Ph.D., Anne K. Rosenstiel-Gross, Ph.D., and Jamie Spears

Psychogenic habit cough—a condition that can be debilitating if it extends over a period of years—has been described in both pediatric and adolescent populations, but not in adults. The authors review the cases of 4 adult patients with this condition, review the available pediatric/adolescent literature, and make suggestions for the direction of future research. In some cases, psychogenic habit cough in adults can be successfully treated with a combination of psychotherapy, relaxation therapy, and speech therapy.


Psychogenic habit cough is a barking or honking cough that is persistent and disruptive to normal activity; it may be a debilitating condition of long duration that can significantly interfere with work and social relationships. Although frequency of this condition is low, the condition is not rare. In contrast to coughs that are a variant of reactive airways disease, there is no objective laboratory (radiologic or other) evidence of disease. Patients with this condition do not show bronchial constriction on methacholine challenge test or other provocative tests for asthma.

Surprisingly, there are scant basic or clinical data reported on this condition in the adult population. Freud reported the condition in 1 patient and related it to repressed sexual fantasies of an oedipal nature, but there have been no reports in the last 50 years of psychogenic habit cough in the adult. Although the case reports in the pediatric/adolescent literature have not looked at the psychodynamics involved, they have identified characteristics that suggest conversion disorder.

**REVIEW OF THE PEDIATRIC/ADOLESCENT CASE LITERATURE**

There are 53 reported cases of psychogenic habit cough in the available pediatric/adolescent literature. In these cases the cough is characterized as a barking or honking cough that persists over several months and disrupts normal activity. Results of a thorough organic workup are entirely within normal limits, with no evidence of underlying reactive airways disease or other physical causes. Pediatric psychogenic cough patients are all reported to stop coughing during sleep, and this has been cited as one indicator of psychogenic etiology.

The behavior of pediatric habit cough patients demonstrates many features consistent with conversion disorder. Many of these children obtain secondary gain by avoiding school and remaining at home with the family. About one fourth of the 53 children reported to have chronic cough initially had a respiratory illness such as bronchitis and then developed chronic psychogenic cough, thus providing themselves with a model for the symptom. “La belle indifférence” has been noted in some cases. Some children have responded to psychotherapy and minor tranquilizers, which suggests associated psychopathology. The available literature contains less information about the presence or absence of somatization disorder, emotional stress before the onset of symptoms, disturbed sexuality, or sibling position.

Successful treatment of habit cough in the pediatric population occurred in 1 to 3 days with a variety of behavior modification suggestion therapies. Each of the following techniques offers pediatric patients a possible cure for their chronic coughs (successful resolution of symptoms has occurred in some cases): bronchoscopy, prevention of mouth breathing by putting a button between the lips, teaching mouth breathing, wrapping a bedsheet tightly around the chest for 1 or 2 days, and application of an aversive stimulus (electroshock to the forearm). Follow-up information is available on 24 pediatric patients who were treated with some type of suggestion therapy; 23 of these patients were without cough 1 year later.

Evaluation of the following 4 adult patients, seen at the National Jewish Center for Immunology and Respiratory Medicine during a 6-month period, indicates that this condition generally meets the criteria for conversion disorder.

**CASE REPORTS**

Case 1

Ms. A, a 30-year-old single white woman, had a chronic barking cough without sputum production since age 14. The coughing occurred daily, and its frequency had increased in the last 4 years; Ms. A always coughed before she spoke. She was diagnosed as having allergic bronchitis and had been treated for 7 years with the following: immunotherapy, i.v. Solu-Medrol, Tussionex, Vibramycin, antihistamines, ACTH injections, chloropromazine.
zine, and recently, prednisone. Laboratory tests that proved negative included sinus x-rays, tomograms of her lungs, echocardiogram, allergy skin tests, and methacholine challenge. Ms. A denied having chest pain, hemoptysis, fever, or chills. A psychiatrist had recently diagnosed panic disorder and prescribed diazepam.

Ms. A's clothes were old-fashioned; she looked and acted like a latency-stage child. She lived at home with her parents, had never had a sexual relationship with a man (and did not desire one), and had occasional dates with a disabled man but little other social life. She showed very little affect but was visibly sad when talking about having missed her older sister's birthday party. She had very low self-esteem, and although she was eager to please during interviews, showed little interpersonal relatedness.

Ms. A's cough had substantially limited her activities, especially during the last 4 years. She had difficulty sleeping and had missed a considerable amount of time in her job as a registered nurse. When prolonged coughing spells prevented her from going to work or church, her mother stayed home with her. Ms. A demonstrated la belle indifférence, stating that the only way her life would be different if she did not cough would be that she could dust.

Case 2

Ms. B, a 30-year-old white woman, had had a chronic cough for 7 years. On admission Ms. B coughed approximately every 10 seconds. She had not experienced a full night's sleep in 7 years, her sex life was significantly interrupted, her social life was limited, and she was unable to care for her 3½-year-old daughter. Medical workup of her cough included passive pulmonary function testing; methacholine and histamine challenges; sinus x-rays; barium swallow; nuclear medicine scan of the lungs with radiolabeled egg albumin; modified Bernstein test; skin tests; ear, nose, and throat (ENT) evaluation; bronchoscopy; gallium scan; exercise tolerance test; thyroid studies; and a formal sleep study. On the basis of these tests, reactive airways disease, gastric reflux, allergy, anatomical abnormalities, and interstitial lung disease were ruled out. The patient said she frequently assumed the role of caretaker for her father, whose multiple disabilities greatly influenced family activities. Ms. B showed minimal affect when describing the death of her mother approximately 1 year before admission; however, the frequency of her cough increased during this discussion.

Ms. B's husband for 7 years, Dr. B, monitored his wife's status at home while he was at work by phoning her between patient visits. The couple described their marriage as ideal, although Dr. B made most of the decisions. Ms. B's typical response to his control and intrusiveness was to overextend herself physically, which resulted in increased frequency of her cough; this behavior made Dr. B feel more helpless.

Case 3

Ms. C, a 28-year-old single white woman, had a chronic cough previously diagnosed as "psychological asthma." Her symptoms had begun during childhood. She later developed shortness of breath and wheezing after witnessing a respiratory arrest while working as a nurse's aide. Ms. C was then diagnosed as having asthma. For 7 years she received continuous treatment with bronchodilators and intermittent treatment with steroids. During the 6 months before hospitalization at our center, she was taking steroids continuously for her chronic cough. Ms. C had had many hospitalizations for multiple medical problems, including two psychiatric hospitalizations for depression. Medical evaluation test results, including allergy testing, sinus x-rays, nocturnal asthma study, methacholine challenge, and pulmonary function testing, were within normal limits. A diagnosis of vocal cord dysfunction was made after an ENT evaluation.

Ms. C had been adopted during infancy, and a brother was born 1 year later. She worked part-time in a local hospital. She had few friends, had never dated, and lived alone. She had daily contact with her parents, who managed her activities and finances. Both parents came to the hospital during Ms. C's evaluation. The patient presented as a rather immature, obese female who looked and dressed much younger than her stated age. She was shy, sitting on her hands and rocking in her chair during the initial interview. Although she had been put on probation at work for absenteeism, she seemed indifferent to her cough.

Case 4

Ms. D was a 19-year-old single white woman who had previously received a diagnosis of psychological asthma. Ms. D had a nonproductive hacking or barking cough that continued for lengthy periods. She had extensively used medical facilities in the year before admission, with two hospitalizations and numerous emergency room visits. After admission, Ms. D had at least one attack daily that lasted from 15 minutes to 8 hours. At home these attacks were treated with intravenous epinephrine (sometimes effective) but at the center intravenous diazepam was effective. Medical workup included a flow-volume loop and laryngoscopy (both conducted during coughing), methacholine challenge, double-blind food testing for allergies, skin testing, and exercise tolerance testing. On the basis of these tests, reactive airways disease, allergy, and anatomical abnormalities were ruled out.

Ms. D had never dated. She attended a state university and lived with her parents. They had redecorated a basement room for her, but after 1 month she moved back upstairs because of "allergies." Ms. D's father frequently left work to care for her, and at night he woke her regularly to administer medications. Although Ms. D was initially eager to come to the center for treatment, she became very upset when her family left, saying she would rather return home than stay and undergo treatment.

Ms. D believed that it was very important for her to control her feelings; expressing anger or sadness made her feel that she was losing control. Her affect was constricted and she often responded reluctantly to questions. During hospitalization, Ms. D's coughing decreased, particularly on days when she was able to express her feelings.
Table 1. Follow-Up of 4 Adult Patients With Chronic Cough

<table>
<thead>
<tr>
<th>Variables</th>
<th>Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
</tr>
<tr>
<td>No. of Months After Discharge</td>
<td>6</td>
</tr>
<tr>
<td>Patient Accepts Chronic Cough</td>
<td>Yes</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Referring Physician Accepts</td>
<td>Yes</td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
</tr>
<tr>
<td>Speech Therapy at Home</td>
<td>No</td>
</tr>
<tr>
<td>Psychotherapy at Home</td>
<td>Yes</td>
</tr>
<tr>
<td>Frequency of Attacks</td>
<td>Less</td>
</tr>
<tr>
<td>Severity of Attacks</td>
<td>Severe</td>
</tr>
<tr>
<td>Now Uses Relaxation and/or</td>
<td></td>
</tr>
<tr>
<td>Breathing Techniques</td>
<td></td>
</tr>
<tr>
<td>ER Visits and Hospitalizations</td>
<td>8</td>
</tr>
<tr>
<td>Before Admission</td>
<td></td>
</tr>
<tr>
<td>Hospitalizations Since Discharge</td>
<td>0</td>
</tr>
<tr>
<td>ER Visits Since Discharge</td>
<td></td>
</tr>
<tr>
<td>On Daily Steroids Before Admission</td>
<td>Yes</td>
</tr>
<tr>
<td>On P.O. Steroids at Follow-Up Call</td>
<td>No</td>
</tr>
</tbody>
</table>

*Dropped psychotherapy after second visit.
Too numerous to count.
*Three hospitalizations were for knee surgery; one was for asthma.
*For knee complaint.

TREATMENT AND FOLLOW-UP

For these 4 patients, redefinition of the illness was crucial to successful treatment. All of these patients initially believed their illness to be a form of asthma, probably life-threatening and resistant to standard treatment. After a thorough medical workup, which included screening by psychosocial team members and speech therapy evaluation, the combined treatment team held an evaluation session with each patient. In these sessions, the patients were informed they did not have asthma but did have a rare medical illness called chronic cough that was not in any way life-threatening, although it was certainly disruptive to their daily activities. They were told that their condition was treatable with psychotherapy and speech therapy that incorporated relaxation and breathing exercises. Because of the lack of research about this condition, three different psychotherapeutic approaches were selected, each aimed at fitting the emotional needs of the patients. Ms. A received supportive psychotherapy; Ms. B and Ms. C received family therapy; Ms. D received individual insight-oriented psychotherapy.

Follow-up was accomplished by contacting the patients and referring physician (Table 1) 6 to 12 months after discharge. Ms. A, Ms. B, and Ms. C reported substantial improvement of their symptoms and no emergency room visits or hospitalizations in the follow-up period. Interestingly, Ms. A's cough lessened, although she did not significantly alter her emmeshed family situation. The 3 patients who had been taking steroids when admitted to the center were able to discontinue use of these drugs. Ms. D, however, was rehospitalized four times, although only one of these hospitalizations was for her cough. She was the only patient who did not accept the diagnosis of chronic cough and who did not follow through with either speech therapy or psychotherapy, after discharge. It is interesting to note that this patient’s referring physician also did not accept the diagnosis.

In addition to decreased use of steroid medication and no need for further hospitalizations, those patients whose cough improved also reported improved sexualization and happiness. Ms. A was in a new heterosexual relationship that was more intense than her previous relationship. She was spending more time in recreational pursuits and was happier. She did not experience panic as she had before coming to the center. Ms. B had lost 10 pounds (4.5 kg) and had improved her relationship and sexual compatibility with her husband. Ms. C reported improvement in her social life, had lost 25 pounds (11.25 kg), and was more successful professionally. Ms. D reported no change in her social life, academic life, or sexual life. Thus, the patient who did not accept her diagnosis noted no changes in sexualization or personal happiness. The follow-up process did not determine whether any of the 4 patients made significant changes in their separation problems during the 6 months after discharge.

DISCUSSION

The similarity of the syndromes described in the pediatric/adolescent literature and those seen in the 4 adult patients treated at the National Jewish Center for Immunology and Respiratory Medicine suggests that there is a diagnostic continuum between the pediatric/adolescent population and the adult population. One of the patients, Ms. A, had developed psychogenic habit cough as an adolescent and continued to have it for 16 years.

The etiology of chronic cough may be considered somatoform because 3 of the 4 adult patients met DSM-III criteria for conversion disorder, and the 4th met criteria for somatization disorder. In addition, all 4 patients had separation problems and difficulty expressing feelings directly. It is not known if these additional problems would be present in a larger sample of psychogenic cough patients.

There were several significant differences between the adult patients described here and the patients described in the pediatric/adolescent literature. Ms. B coughed during sleep, a symptom previously thought to indicate organic rather than psychological etiology. All 4 adult patients experienced symptoms of much longer duration compared with the adolescent patients. Finally, improvement in the cough took weeks to months in the adult patients but occurred in 1 to 3 days in the pediatric patients.

In the pediatric population, the reported treatment is simple behavior modification, best described as suggestion therapy. Successful treatment of conversion disorders in adults has been reported in 40% to 90% of patients. Three of the 4 patients described were successfully treated with a combination of speech therapy, relaxation techniques, and psychotherapy (of either a supportive or family dynamics approach). It is not clear from this small sample whether all three types of therapy were necessary elements of treatment for these 4 patients or which modalities would be most beneficial in a larger sample.
CONCLUSION

Three of the 4 patients presented here achieved significant improvement despite having a history of prolonged chronic cough. This suggests that habit cough may be as treatable in adults as it is in the pediatric population. However, if the supporting medical team, the family, or the patient is not ready to relinquish the notion of an organic diagnosis, the prognosis is not as good.

It is particularly important for medical, psychosocial, and speech pathology personnel to have a unified approach to treating chronic cough patients, especially because patients with conversion symptoms tend to be very suggestible. Therefore, it is important that the medical team makes it clear to these patients that psychotherapy, behavior therapy, and speech therapy are specific treatments. Otherwise they may perceive themselves as being put off or put down, with the result that they will repeatedly seek further medications and hospitalizations elsewhere.

It is helpful to recognize this condition early in its course so that appropriate treatment can be instituted before iatrogenic problems resulting in multiple hospitalizations and chronic steroid use occur. It is also mandatory that any patients with a long-term coughing problem receive a thorough organic workup to eliminate the possibility that the condition is organically based.

REFERENCES