

# Chest tightness variant asthma (CTVA): reconfirmed and not generally appreciated

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Submitted Feb 11, 2014. Accepted for publication Feb 11, 2014.

doi: 10.3978/j.issn.2072-1439.2014.02.05

View this article at: <http://www.jthoracdis.com/article/view/2201/2917>

In 2013, Shen *et al.* published a report in which they described 24 patients with asthma whose sole presenting clinical manifestation was chest tightness (1). In doing so, these investigators have reminded us that: (I) asthma can present with a variety of symptoms; (II) physiological testing for bronchial hyperresponsiveness is very important to assess for the possibility of symptomatic asthma; and (III) a favorable response to asthma therapy is necessary to confirm that the tests showing bronchial hyperresponsiveness are true and not false positive tests.

While the varied clinical presentations of asthma have been known for years, this information is not generally appreciated, perhaps because this work was published 30-40 years ago. With their recent study, Shen *et al.* have supported the validity of these earlier findings. In a review article on the clinical value of pharmacologic bronchoprovocation challenge that we published in 1990 (2), we summarized the literature on the clinical presentations of asthma in the following way: "Although the classic triad of symptoms associated with asthma is cough, shortness of breath, and wheeze occurring simultaneously, it is not unusual for one or more of these complaints to be absent. Moreover, asthma may present with other symptoms". For example, "It has been determined that asthma can present solely with cough, shortness of breath, chest discomfort (such as chest pain or tightness) (3,4), cough with expectoration, and the hyperventilation syndrome". Because asthma, a very common disease, can present with variant as well as classic symptoms, it behooves clinicians to be aware of the variety of presentations to avoid misdiagnoses as revealed by Shen *et al.* (1).

In the clinical realm, the diagnosis of asthma may

not readily come to mind when patients present without wheezing. Moreover, the clinical evaluation alone even by asthma specialists uncovering a history of wheeze, a prior diagnosis of asthma and expiratory wheezing on physical examination has been shown to be an unreliable method of diagnosing asthma (5). Therefore, the diagnosis of asthma should be objectively confirmed by physiological testing. Such testing should assess for bronchial hyperresponsiveness that is a near universal finding in symptomatic asthma. As shown by Shen *et al.* (1), the presence of bronchial hyperresponsiveness can be revealed by bronchoprovocation challenge testing with an agent such as methacholine when baseline spirometry is normal or near normal, diurnal variation of peak expiratory flow rate, or spirometry before and after bronchodilator when there is baseline obstruction. When baseline spirometry is normal, one should not rely on improvement after bronchodilator to reveal bronchial hyperresponsiveness because it is unlikely that there is obstruction to reverse.

While bronchial hyperresponsiveness is consistent with the diagnosis of asthma, its presence is not diagnostic of asthma being the cause of the symptoms because bronchial hyperresponsiveness has been reported in a variety of other conditions (2). To determine that the test is diagnostic of asthma requires a favorable response with marked improvement or elimination of symptoms with asthma therapy. Such was done in the study of Shen *et al.* (1).

In an era when molecular biology and genetics research gets most of the headlines, the article by Shen *et al.* is noteworthy because it reminds us of the importance of clinical research and the relevance of lessons learned from excellent research from 30-40 years ago. These investigators

have not only reconfirmed a generally unappreciated variant presentation of asthma but also how to do so.

### Acknowledgements

*Disclosure:* The author declares no conflict of interest.

### References

1. Shen H, Hua W, Wang P, et al. A new phenotype of asthma: chest tightness as the sole presenting manifestation. *Ann Allergy Asthma Immunol* 2013;111:226-7.
2. Irwin RS, Pratter MR. The clinical value of pharmacologic bronchoprovocation challenge. *Med Clin North Am* 1990;74:767-78.
3. Farr RS, Kopetzky MT, Spector SL, et al. Asthma without wheezing. *Chest* 1973;63:Suppl:64S-68S.
4. Myers JR, Corrao WM, Braman SS. Clinical applicability of a methacholine inhalational challenge. *JAMA* 1981;246:225-9.
5. Pratter MR, Hingston DM, Irwin RS. Diagnosis of bronchial asthma by clinical evaluation: an unreliable method. *Chest* 1983;84:42-7.

**Cite this article as:** Irwin RS. Chest tightness variant asthma (CTVA): reconfirmed and not generally appreciated. *J Thorac Dis* 2014;6(5):405-406. doi: 10.3978/j.issn.2072-1439.2014.02.05