REVIEW

A paper that changed my practice: S McKenzie. Cough but is it asthma? *Arch Dis Child* 1994;**70**:1–2

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Most doctors can identify key papers that have influenced their approach to the management of a particular clinical problem, although sometimes the gestation period of this effect can be very prolonged. In this short review I discuss the effects of a seminal paper by Sheila Mackenzie from the early 1990s on my current approach to the diagnosis and management of chronic cough in children.

The diagnosis of asthma has been influenced by the vagaries of fashion. In the early 1990s, Speight *et al*¹ raised concern that asthma in children was being underdiagnosed and undertreated. Since then, the willingness of doctors to make this diagnosis has increased considerably and the pendulum has swung towards overdiagnosis and overtreatment. Although many factors have undoubtedly contributed to this phenomenon, the increased availability of effective drugs for asthma and the enthusiasm of the pharmaceutical industry to sell them must have played a considerable part. Another factor has been poor education, which has resulted in a tendency to label any chronic respiratory symptoms in children as being asthmatic in nature, unless proved otherwise. The lack of accepted methods for diagnosing asthma in young children and misunderstandings between parents, patients and doctors as to the meaning of terms such as wheeze and “chest tightness” have added to the confusion.

One controversial issue has been the use of the diagnostic label “cough variant asthma”. The nature, incidence and even existence of this entity have been much debated since it was first described by McFadden in adults in 1975² and in children by Cloutier and Loughlin in 1981.³ These studies claimed benefit from the use of isoprenaline and theophyllines respectively. This diagnosis was used increasingly throughout the 1980s and into the 1990s, and it became accepted practice for isolated persistent cough to be treated with a combination of inhaled β agonists and corticosteroids. More worrying was the tendency of paediatricians (myself included) to consider the apparent lack of efficacy of inhaled corticosteroids in a patient to be a problem of inadequate dosage rather than diagnostic failure. This often resulted in increasingly higher doses being used, usually in retrospect, with no benefit and occasionally with a detrimental outcome.⁴

McKenzie⁵ was one of the first to question this practice and the very existence of the syndrome. She pointed out that epidemiological studies supported

the observation that cough is a poor marker for wheeze and atopic status, and the weak relationships between cough, lung function changes and increased bronchial responsiveness typical of asthma. Furthermore, she pointed out the lack of evidence of efficacy of β agonists and the absence of any studies at that time on the use of inhaled corticosteroids. She sensibly suggested that drugs such as inhaled corticosteroids should not be used until evidence of airway lability had been shown.

McKenzie's paper came as a shock to me, and I remember feeling threatened and somewhat offended that my management of such a common paediatric respiratory problem was being questioned. I was reassured when numerous eminent paediatricians were moved to express similar sentiments in response to the original article,^{6–8} indicating that I was not alone. The article did, however, have the intended effect, and McKenzie's views have now been largely vindicated. Recent Cochrane reviews have found very little evidence to suggest any benefit from either inhaled corticosteroids⁹ or β_2 agonists in children with isolated cough.¹⁰

This paper made me think and question the veracity of my own diagnoses. The difficulty was in how to fill the diagnostic vacuum. The differential diagnosis of chronic cough in children is long. Recurrent viral respiratory tract infection is often cited as the most common cause, but many children visiting my clinic had symptoms in the absence of any obvious viral precipitant. Fortunately, two new tools which would have a profound effect on our diagnostic abilities were emerging at this time—namely, flexible fiberoptic bronchoscopy and high-resolution computerised tomography (HRCT). Bronchoscopy began to show many structural abnormalities including tracheomalacia, bronchomalacia and tracheal bronchi, which were often unsuspected clinically. It could also confirm bacterial infection and, if lavage was carried out via a laryngeal mask airway, could differentiate between upper airway colonisation and true infection of the lower respiratory tract. HRCT also began to show many abnormalities, even in children with a normal plain chest radiograph. These included bronchiectasis, which has now been shown to be a relatively common problem,¹¹ and evidence of small airway disease, which may suggest obliterative bronchiolitis. Although these two tools have dramatically improved our diagnostic abilities, they have mainly served to refute the diagnosis of asthma, and confirmation of a positive diagnosis still requires a complex amalgamation of history, clinical features, special investigations and assessment of the response to treatment. We still require a single

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How this paper changed my practice

What I learned from McKenzie's review was not that cough variant asthma does not exist, because the axiom remains that it is unwise to use "never" in medicine and I do have a very small number of patients who fit this label. Instead, it has made the diagnosis of cough variant asthma one of exclusion. It has led me to always seriously question the diagnosis when a patient presents with isolated cough, especially in the absence of other evidence of IgE-mediated disease. My threshold for investigating such patients in detail is lower and has resulted in an alternative diagnosis being reached with increased frequency.

simple and reliable instrument to confirm a positive diagnosis of asthma in children, and much effort has been expended towards this. The latest candidate is measurement of nitric oxide in exhaled breath (FeNO), with recent claims that changes in treatment of children with known asthma can be titrated according to changing levels.¹² It remains to be seen whether this tool will prove to be sufficiently sensitive, specific and robust for routine clinical use.

Competing interests: None declared.

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