

application of bacitracin ointment to secondarily infected atopic dermatitis (6). This patient had noted local pruritis and lip swelling after using bacitracin 2 months earlier. Vale et al. (7) described a patient with a vague history of bacitracin allergy who developed anaphylaxis after using topical bacitracin on a healing skin-graft donor site. In the case of our patient, the integrity of the skin was disrupted by the tattoo, providing a port of entry to the systemic circulation. Patch testing to bacitracin was not performed on this patient, since there was no evidence of a delayed hypersensitivity reaction and since the patient had clear evidence of IgE-mediated hypersensitivity.

There are no reports of tattoos causing anaphylaxis. The metal salts used in some pigments may produce localized reactions, sometimes up to 20 years after the tattoo was applied. Mercury red, chromium green, cobalt blue, and cadmium yellow have been implicated in eczematous, granulomatous, and photosensitive reactions (8). Our patient had no history of local cutaneous reactions after tattooing. It is highly unlikely that his anaphylactic event related to the tattoo, as the reaction resolved without removal of the pigments.

Bacitracin is a commonly used agent which rarely triggers anaphylaxis. It is considered a safe medication and is available without prescription. Increased awareness will allow early warning signs of potential IgE sensitization to be heeded, avoiding dangerous exposures.

Key words: anaphylaxis; bacitracin; topical.

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Sex difference in asthma prevalence

Most epidemiologic surveys on the prevalence of childhood asthma find higher figures for boys than girls (1). The sex ratio is 1.5-2.0 boys to 1 girl. In adults, the sex ratio is close to 1 (1). Three explanations have been advanced to account for this discrepancy: dysanaptic lung growth leading to a lower bronchi diameter to lung volume ratio in males (2), and higher prevalences of atopy (3, 4) and bronchial hyperreactivity (5), respectively, in males. Here, we develop a cultural hypothesis, the so-called Yentl syndrome (6).

■ In 1993, we performed a cross-sectional epidemiologic study in southeast France. The study group included all schoolchildren from the 4th and 5th grades enrolled in either public or private schools: i.e., 3494 children,

mostly 13 and 14 years old. We used the ISAAC phase 1 standardized questionnaire, including questions on the prevalence of wheezing, number of attacks, sleep disturbance, severe wheezing, exercise-induced wheezing, nocturnal dry cough, and the 12-month prevalence of asthma. We also recorded parental occupation. We thus classified the income of each parent into low, medium, or high. In addition, after answering the questionnaire, the children were shown a videotape and were asked whether they had ever had wheezing, attacks of breathlessness with wheezing on exertion and at rest, or dry cough attacks or attacks of breathlessness at night, as shown on the tape (7). The participation rate was 93%. For each symptom separately, as well as for diagnosis of asthma, we performed first a comparison of prevalence rate by sex with the chi-square test, and then a logistic regression analysis using sex as dependent variable but also potentially confounding variables: age, socioeconomic status, and passive and active smoking. Answers of "Don't know" were considered "No".

■ Table 1 shows the cumulative prevalence of asthma and asthma-like symptoms by sex, clearly indicating that the cumulative prevalence of asthma was significantly higher in boys but that the cumulative prevalence of asthma-like symptoms was similar in both sexes. The percentage of answers to the

Is the prevalence of asthma in boys really higher than in girls?

Table 1. Percentage of positive answers to paper and videotaped questionnaires, according to sex

	Boys (n=1733)		Girls (n=1761)
<i>Paper questionnaire</i>			
Cumulative prevalence of asthma	16.4	$P<0.001$	12.3
Cumulative prevalence of wheezing	21.5	NS	22.1
12-month prevalence of wheezing	15.7	NS	14.8
More than 12 attacks in last 12 months	1.4	NS	0.9
At least one attack at night per week	1.4	NS	1.0
Wheezing with severe breathlessness	2.6	NS	2.9
Exercise-induced wheezing	21.2	NS	24.4
Nocturnal dry cough	25.6	NS	28.2
<i>Videotaped questionnaire</i>			
Ever wheezing	15.4	NS	13.9
Wheezing in last 12 months	10.0	NS	9.4
Ever breathlessness and wheezing at exertion	28.4	$P<0.001$	34.9
Breathlessness and wheezing at exertion in last 12 months	21.3	$P<0.001$	28.4
Ever dry cough at night with awakening	20.8	$P<0.001$	27.0
Dry cough at night with awakening in last 12 months	5.9	NS	4.7
Ever attack of breathlessness with wheezing at night	21.5	$P<0.001$	28.1
Attack of breathlessness with wheezing in last 12 months	12.4	$P<0.001$	18.9
Ever attack of breathlessness with wheezing at rest	8.5	NS	8.9
Attack of breathlessness with wheezing at rest in last 12 months	6.1	NS	6.1

videotaped questionnaire was actually higher for some items in girls.

The sex difference in cumulative prevalence of asthma varied according to parental income. Sex differences in asthma prevalence involved mainly children from low-income families, whereas there were no significant sex differences in children from higher income families.

■ There are several explanations of this discrepancy between asthma symptoms which seem to be equally distributed in boys and girls and a more frequent diagnosis of asthma in boys:

- 1) The disease could be more severe in boys, leading to a higher rate of medical consultation, although, in our survey, the prevalence of severe wheezing was not higher in boys.
- 2) There might be a genuinely higher prevalence of asthma among younger boys. This sex difference might have disappeared in teenagers, whereas children who were told they had asthma would be more likely to recall the diagnosis than to recall what the symptoms were like.
- 3) Sexism might have led to a systematic underestimation of symptoms in girls by the children themselves, their parents, or their physicians.

In support of the last explanation, we, like Verdier-Taillefer et al. (8), found an association between occupation, a proxy variable for the education level of the parents, and underdiagnosis of asthma in females. Indeed, sex difference in the prevalence of asthma in children occurred only in families (both parents) with low income. Such underestimation of disease in females, known as the Yentl syndrome (6), has been previously reported (9) in childhood asthma, where not only underdiagnosis in girls, but also undertreatment of diagnosed female cases has been found. Our data are better founded because we used not only a paper questionnaire but also a videotape questionnaire which portrays asthma symptoms (7).

In conclusion, we confirm that the Yentl syndrome could cause selective underlabeling of asthma in girls compared to boys, greatly contributing to the underdiagnosis and undertreatment of childhood asthma previously pointed out. The higher prevalence of asthma reported in boys could be partly related to this phenomenon.

Key words: asthma; epidemiology; prevalence; sex.

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