by the volatile monomeric form during mixing is the first situation potentially dangerous for dental technicians. The second situation is linked to the environmental liberation of the polymeric form when polishing the solid plastic. Barrett (5) described the first case of interstitial lung disease related to an exposure to aerolized acrylic polymer of methacrylate in a dental student.

Even if this case was described as a pneumoconiosis, it showed usual characteristics of HP, and as in our two patients, clinical symptoms appeared within the first year of exposition to MMA during dental training. Confirming Barrett's case (5), the present two cases showed that MMA is potentially responsible for hypersensitivity pneumonitis. These data underlined the need for dental staff exposed to this substance to avoid direct contact with MMA, and to profit by adequate technical prevention measures, such as masks and local exhaust ventilation systems (8).

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Non-right-handedness and asthma

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Key words: asthma; adults; left-handedness; hormones.

This preliminary study aimed to estimate the evolution of asthma from adolescence to adulthood in a subgroup of left-handed and ambidextrous individuals with asthma.

Non-right-handed persons with asthma might have a different prognosis.

All the 274 students of the Faculty of Health Science of the Technical Education Institute in Larissa, aged 18–35 years were enrolled in the study. A total of 268 questionnaires were completed. An adapted version of the ECRHS questionnaire was used for the assessment of asthma (1). Left-handedness was examined by the Edinburgh Handedness Inventory. The score ranges from −100 for extreme left-handedness to +100 for extreme right-handedness. The criterion of LQ ≤ 60 was used to indicate non-right-handedness (2).

The data were examined using contingency tables and the Fisher's exact probability test, which is suitable for small numbers of observations (3).

Female : male ratio in the sample of the 268 students was 239 : 29. The mean age of the students was 21 years. Twenty-nine women reported an asthma diagnosis. Non-right-handedness was traced in six women (aged 19–20 years) among the 29 asthmatic individuals. LQ range was between −80 and 50. None of these six non-right-handed women reported asthma symptoms after 18 years of age and they were all free of symptoms for at least the past 2 years. On the contrary, 13 of the 23 right-handed women reported persistence of asthma symptoms after 18 years of age. A statistically significant difference was established between the two groups of right- and non-right-handed women (see Table 1).

Non-right-handedness has been associated with immune and allergic diseases, including asthma (4). Testosterone or some other substances, which are thought to be responsible for left-handedness may have a crucial effect in the development of asthma even since fetal life (4). Non-right-handed asthmatic children may represent a subgroup with special pathophysiological features and a different prognosis (5, 6). Despite the fact that non-right-handed asthmatics may experience more asthma attacks in childhood than right-handed (6), a non-right-handed asthmatic child might be expected to turn into a healthy adult. As for possible underlying pathophysiological mechanisms, it has been documented that central nervous system can modulate in various ways the immune response and there has been some evidence from animal experiments that brain laterality is associated with changes in lymphocyte function (7). If

Table 1. Asthmatic attacks after 18 years of age in non-right-handed students with asthma

	Asthmatic attacks after 18 years		
Handedness	Yes	No	Total
LQ > 60	13	10	23
LQ ≤ 60	0	6	6
Total	13	16	29

$P < 0.05$ (Fisher's exact $P = 0.02$).

non-right-handed persons with asthma finally turned out to have a different prognosis, this would lead to a further understanding of mechanisms and genes underlying the disease of asthma and other immune disorders.

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Occupational asthma due to pork antigens

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Key words: occupational asthma; asthma.

We describe two cases of occupational asthma (OA) in workers processing pork meat confirmed by specific inhalation challenges. Animal proteins are a part of the high-molecular weight agents that frequently causes OA (1). In the pork animal, swine confinement facility workers often develop respiratory problems (2, 3) these complaints are less frequent in meat pork-processing plants where the environmental conditions are different. The following report describes two cases of (OA) pork antigen in a meat pork industry.

Pork antigen can cause occupational asthma through an apparently Ig-E mediated mechanism as evidenced by immediate skin reactivity reaction to the pork extract.

Both cases were male (33 and 49 years.), atopic and employed in a meat pork-processing plant for 1 and 11 years (subjects A and B) with no previous history of atopy. They were working on the production line, cutting up quarters of pork. After 6 months (subject A) and 11 years (subject B), both developed cough and attacks of wheezing and dyspnea, after starting work on the production line and getting worse at the end of the day. When seen in the clinic, both had been off work for several weeks and almost asymptomatics. Both subjects had a positive skin-prick test (10 and 5 mm) to an extract of pork meat antigen (Hollister-Stier Laboratories, Spokane, WA, USA). Subject A had normal forced expiratory volume (FEV1, 4.85 l) and borderline bronchial responsiveness with PC20 methacholine of 8.65 mg/ml. A bronchial challenge with nebulized pork meat antigen elicited an early response with 30% fall in FEV1 and no change in PC20 (Fig. 1). Subject B had also a normal FEV1 (3.14 l) and mild bronchial hyperresponsiveness (PC20 5 mg/ml). Monitoring of FEV1 at work confirmed the diagnosis of OA with an early response (FEV1 fell by 24% after 45 min of exposition with recovery over 2 h) . Patients were removed from their workplace with improvement in their symptomatology.

Those cases reports show that pork antigen can cause OA through an apparently IgE-mediated mechanism as evidenced by immediate skin reactivity reaction to the diluted pork extract. These subjects also presented symptoms of occupational rhinoconjunctivitis, which is commonly encountered in the case of high-molecular weight agents (4). First case of asthma because of occupational exposure to pigs was reported in 1981 (5). In that case, OA was proved with an inhalation challenge of an extract of pig's urine. PausJenssen and co-workers (6) indeed described an interesting case of OA in a meat pork-processing plant as a result of type-I hypersensitivity and protein contact dermatitis because of type-IV hypersensitivity caused by pork in the same individual. In conclusion pork antigen in workers can give different forms of protein sensitization.

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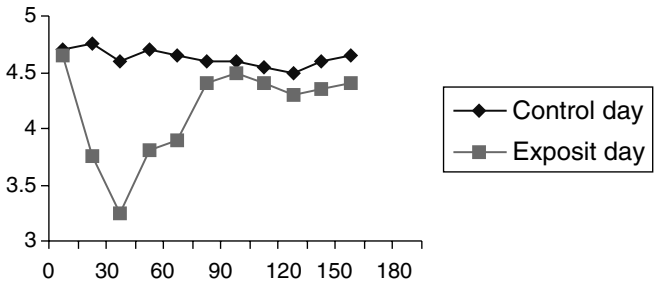

Figure 1. A bronchial challenge with nebulized pork meat antigen elicited an early response with 30% fall in forced expiratory volume 1.