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SHORT REPORT

Celiac disease and immigration in Northeastern Italy: the "drawn double nostalgia" of "cozonac" and "panettone" slices

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Abstract: Many investigators consider children's drawings to be an important test in the evaluation of stress and anxiety, but few studies have examined the reliability and validity of indicators of emotional distress in children's projective drawings. In this report, we describe screening tests in children coming to the Friuli Venezia Giulia region in Northeastern Italy from non-European Union regions and suspected to have celiac disease, the problems involved in diagnosis of the disease, and the "drawn double nostalgia" of Romanian children for both Italian food and traditional Romanian foods. Of 3150 Western European cases, we found 712 with positive antibodies for IgA/IgG antitransglutaminase, 174 with a positive antiendomysium antibody confirmation test, and 20 with an IgA deficit. Of the children examined, 93% were children native to Western Europe, 4% were immigrants from Eastern Europe, and 1.6% originated from Africa. Among these, four Romanian children with celiac disease brought in their drawings, as requested in a hospital questionnaire. The prevalence of celiac disease is destined to increase among immigrants. Economic problems are common, and the twin nostalgia of immigrant children for foods and tastes that are "cozonac" (from the native country) and "panettone" (Italian cake flavor) represents a problem that will be difficult to resolve. Only some children's hospitals in Italy, ie, Burlo Garofolo and Gaslini, public and private foundations, or volunteer associations would be able to deal with this problem.

Keywords: drawing, nostalgia, immigration, celiac disease, food, children

Introduction

In Europe, increasing immigration, both legal and illegal, of economically disadvantaged families from Romania, Ukraine, North Africa, and neighboring regions, has highlighted new health issues relating to immigrant children, far from their native country, some of which may be suffering from malignancy, disability, or congenital disease. Immigrant families with sick children find it difficult to access appropriate pediatric health care for financial reasons, and children admitted to our hospital show a range of psychological and social behaviors that include nostalgia for their country of origin. We have recently reported data highlighting the difficulties of health screening in Italy and Europe in economically disadvantaged immigrant populations with different languages and cultures. Our research shows how much still needs to be done to bring immigrant children under the umbrella of our own health "standards" and the important role of voluntary associations in attaining that goal.[1] At the Children's Hospital of Trieste, the main town of Friuli Venezia Giulia in the Northeastern Italy region, our policy is to assist our pediatric patients to continue their schooling as far as possible during their hospital stay and, when necessary, sick children are assisted

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with games and painting. However, this practice is more difficult to implement for immigrant children.[2–4]

Here we report the difficulties of confirming a diagnosis of celiac disease in children from non-European Union member states, and some examples of "drawn double nostalgia" for foods that they can no longer enjoy if they are affected by celiac disease. In some cases, this leads them to recall tastes, flavors, and smells from their native country that are difficult to replace with gluten-free food products available in specialized stores, and that are not always reimbursable by the Regional Health Service, creating "double drawn nostalgia". Drawing is an important source of expression during childhood when appropriate words and language are lacking. There are currently no scientific reports in the literature on this phenomenon, although there is some work describing the difficulties that arise when a sudden and severe illness affects a child.[5]

Materials and methods

In 2009–2010 we embarked on a study of celiac disease by reviewing positive antitransglutaminase antibody tests carried out at the Burlo Garofolo Children's Hospital laboratory in a population of 3150 children aged 3–16 years. The tests carried out were for antitransglutaminase IgA and IgG antibodies, detected by autoimmunoassay (PHADIA ImmunoCap 250, Milan, Italy), and confirmatory antiendomysial antibodies detected by manual immunofluorescence. Family members of these young patients completed a questionnaire in which they were asked to state their country of origin and any possible nostalgia for their native country. The study was approved by the institution's bioethics committee, and informed consent was obtained from the parents of all participating children.

Results

Of 3150 children examined, the vast majority was Italian and resident in the Friuli Venezia Giulia region (93%), with only 4% coming from Eastern Europe and 1.6% from Africa. There was also a small and statistically insignificant group of children from South America, as reported previously.[6] In these 3150 predominantly Western European cases, we found 712 with positive antibodies for IgA/IgG, 174 with a positive endomysial antibody (confirmation) test, and 20 with an IgA deficit (Table 1). In response to the item "Which foods do you like?" in a questionnaire, four Romanian mothers reported that their children (all males affected by celiac disease) often expressed their nostalgia for favorite foods through drawing and painting, commonly "pizza, Christmas panettone, and cozonac". Clearly, for immigrant children with celiac disease, it is difficult to replace the foods that they are no longer able to eat with alternative foods from their native country that are not widely available in Italy (Figures 1 and 2).

Discussion

Celiac disease is emerging in Africa, Southeast Asia, and South America at prevalence rates similar to those in Western Europe. From a health point of view, the difficulties encountered in approaching this type of diagnosis in patients from non-European Union member countries are self-evident, and they are additive to those encountered when identifying other emerging pathologies, both of an infectious, sexually transmitted nature (especially syphilis, acquired immunodeficiency syndrome, and human papilloma virus that attract more attention and funding), and of a nutritional nature (obesity, diabetes mellitus, growth retardation, and malnutrition).[7] Positive test results for IgA and IgG that require other tests for a definitive diagnosis are accompanied

Table 1 Total numbers and percentages of positive antibodies in 3150 children (native and immigrant)

	Natives (Western Europe)	Immigrants (Eastern Europe)	Immigrants (Africa)	Immigrants (South America)	Total positive antibodies
Positive IgA/IgG, anti-tTG antibodies	666 (93%)	30 (4%)	12 (1.7%)	4 (0.6%)	712
Positive IgA, anti-tTG antibodies	580 (82%)	6 (0.8%)	3 (0.4%)	NC	NC
Positive IgG, anti-tTG antibodies	420 (63%)	4 (0.6%)	2 (0.3%)	NC	NC
IgA deficit	20 (2.8%)	NC	NC	NC	NC
Positive anti-EMA	174 (24.4%)	4 (0.6%)	2 (0.3%)	2 (0.3%)	182

Abbreviations: Ig, immunoglobulin; tTG, antitransglutaminase; EMA, endomysium antibodies; NC, not calculated.

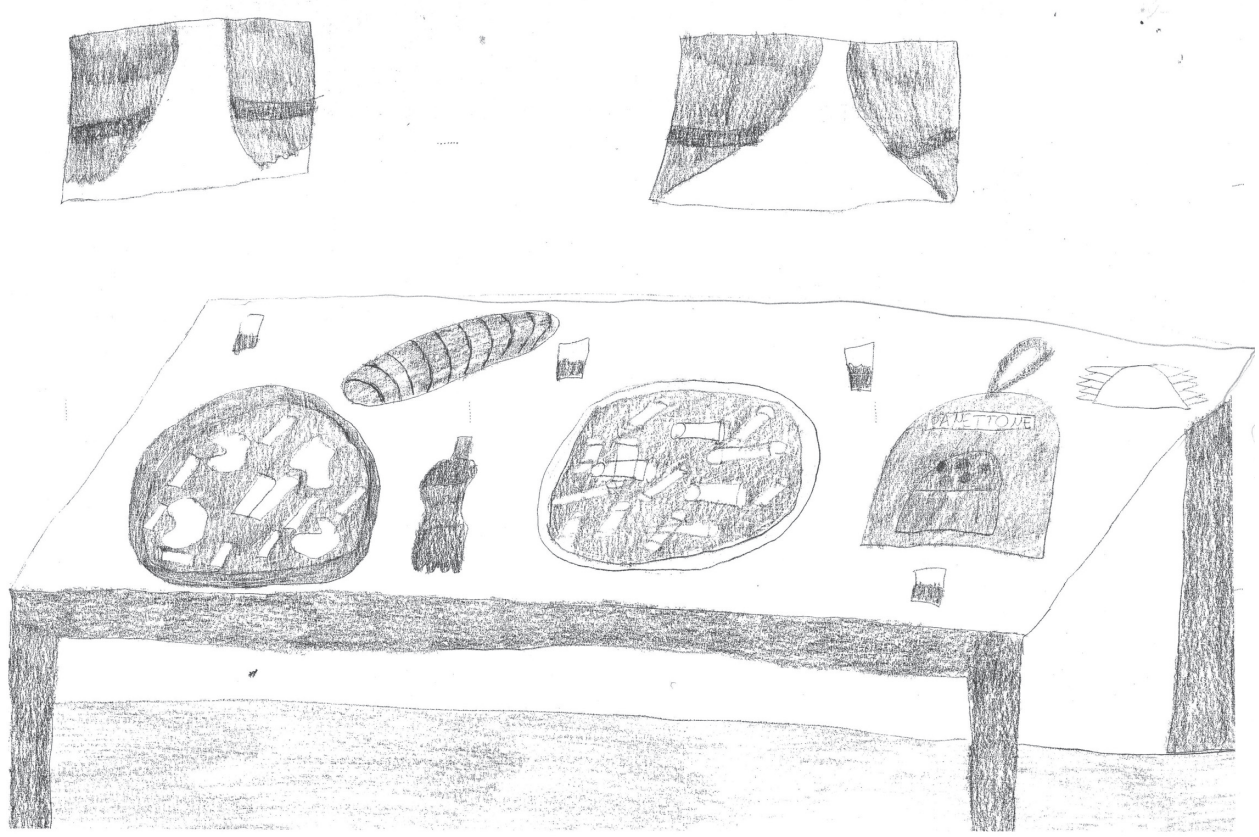

Figure 1 Drawing of "panettone" and "cozonac ca nuca" by a boy with celiac disease.

by a low percentage of positive antiendomysium antibody confirmation results among the Eastern European population (0.6%) and among the Afro-Arabic population (0.3%). A possible interpretation of these data, within the limits of this type of research, is the low cereal diet in Eastern Europe, with a predominance of potatoes and in the African and Arabic worlds where wheat flour and cornmeal are not consumed to a great extent.[8–10]

On the basis of the latest statistics provided by the Ministry for Education, University and Research relating to the school year 2008–2009 in Friuli Venezia Giulia, the number of students from non-European Union member states is 9.9% of the entire school population. In percentage terms, a higher presence is encountered in middle school (11.3%), followed by kindergarten (10.6%), and primary school and high school (7.6%). In compliance with national law (123/2005, which is still not very well-known among the non-European Union member populations) which declares celiac disease to be a public health problem, regional authorities have a duty to organize training courses for canteen staff, restaurateurs, shops, and health care personnel. In Friuli Venezia Giulia, the law was acknowledged in 2007 with decree 561, delegating the aforementioned duty to the health authorities, in collaboration with celiac associations. The diagnosis of celiac disease is also likely to increase among non-European Union populations and/or populations originating from abroad, and may become an emerging social problem.[11–13] Serologic tests developed in the last decade provide a noninvasive tool to screen individuals at risk for the disease.[14–16] The diagnostic role of assays to identify antitransglutaminase, antiendomysium, and antigliadin antibodies must be addressed.[17–19] Particular attention should be given to IgA deficiency and to utilization of tests to identify human leukocyte antigen DQ2/DQ8 haplotypes and their societal costs.[20–22]

Comparing our data with the few screening studies carried out in Europe and in non-European Union countries, no significant differences are noted, but the difficulty and cost of arriving at a diagnosis highlights the social and economic problem,[23,24] especially in Africa and Southwest Asia where, during episodes of infectious illness and epidemic diarrhea, humanitarian associations distribute grain and

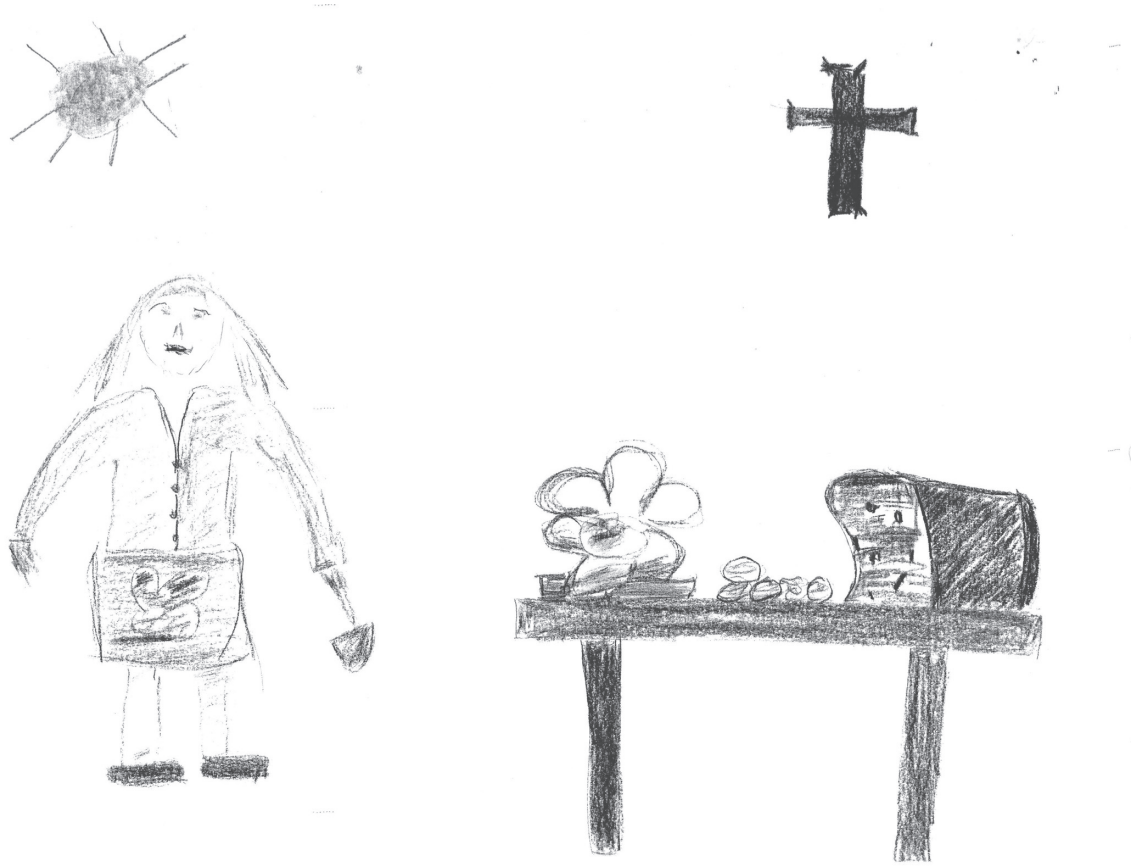

Figure 2 A drawing by a girl with celiac disease of her mother, "cozonac", and other cakes during an Easter holiday in Romania.

powdered milk, causing re-emergence of symptomatic celiac disease.[25,26] Last, but not least, nostalgia is an emerging problem affecting sick immigrant children in Europe. This has not yet been taken into consideration, and presently seems an impossible problem to solve, with few children's hospitals in Italy, ie, Burlo Garofolo and Gaslini, as well as public and private foundations or volunteer associations, in a position to address it.

Disclosure

The authors report no conflicts of interest in this work.

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