

letters



Seasonal variation of appendicitis in northern Saudi Arabia

To the Editor: We have noted apparent discrepancies in the monthly number of appendectomies performed in our hospitals, which we decided to verify. Retrospectively, we analyzed all cases operated on with a discharge diagnosis of acute appendicitis in Hail General Hospital (HGH) and King Khalid Hospital (KKH), Hail, Saudi Arabia, from January 2000 to December 2006. These two hospitals treat nearly all cases of appendicitis in this city. Negative appendectomies and cases with intra-operative findings of other pathology with similar clinical features as acute appendicitis were excluded. A total of 3159 cases met our inclusion criteria comprising of

1629 and 1530 cases from HGH and KKH, respectively. We used the chi-square statistic for analysis with probability less than 5% set for statistical significance.

We observed a low in the number of appendectomies in the winter months of December to February and a high in the spring months of March to May (Figure 1). These differences proved to be significant ($P < .001$). Our finding agrees with published reports from the USA,¹ Canada,² Italy,³ Israel⁴ and Russia⁵ where appendicitis had a peak incidence in the summer months with a winter nadir. The reason for these trends has been the subject of conjecture. While many believe that the etiology of acute appendicitis is multi-factorial,⁵ none have been able to show conclusively its precise etiology. Gender and ethnic trends have been observed^{1,2,6} and offered as proof the role of genetic factors. Diet, hygiene, the climate and infective agents,⁷ on the other hand, have been proposed as environmental factors that may play roles in the etiology of acute appendicitis.

The increase in incidence of acute appendicitis in the spring months in our locality coincides with the onset of the sandstorm season in the Arabian peninsula, characterized by strong winds blowing across the desert bringing dust that hangs in the air. We are inclined to believe that the weather change has something to do with our observation. Our hypothesis has found credence in the work of Kwasi et al⁸⁻¹⁰ who have studied the health impact of this climatic phenomenon in the city of Riyadh. They amply demonstrated the strong pathogenic potential of date palm pollen as an allergen and isolated viable microbial pathogens and pollen allergens in sandstorms.¹¹ Further support for our hypothesis comes in the recent paper by Bellester et al,¹² who found a significant association

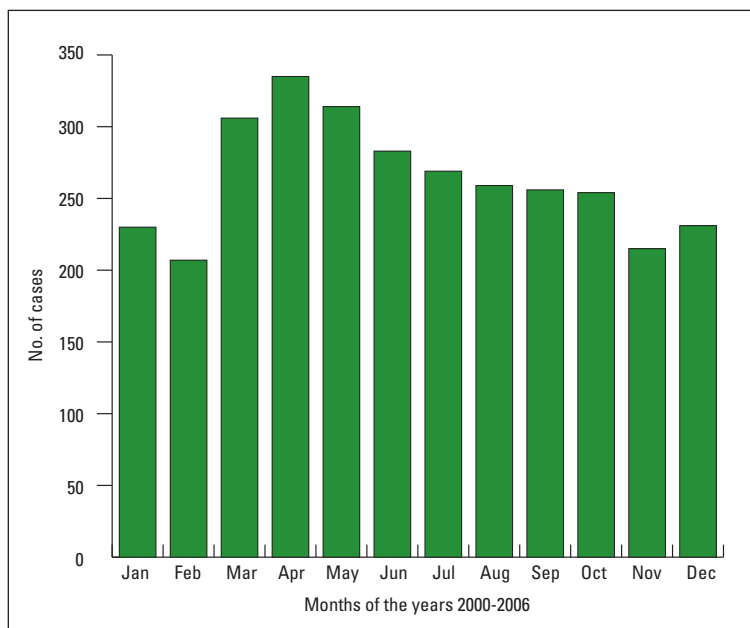


Figure 1. Bar diagrams showing the combined monthly number of cases of appendicitis Hail General Hospital and King Khalid Hospital, Hail from 2000 to 2006 inclusive.

between tonsillectomy and appendectomy among Spanish patients.

We suggest that the intense challenge to the mucosa-associated lymphoid tissue from allergens, bacteria and viruses, as occurs during the sandstorm season, may be causally related to acute appendicitis and would explain the seasonal variation we have noted. By implication we expect that preventive strategies and adequate treatment of respiratory tract infections and allergies affecting the airway among children should prevent some cases of acute appendicitis.

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