Journal of Pediatric Surgery 56 (2021) 635–636

Contents lists available at ScienceDirect

Journal of Pediatric Surgery

journal homepage: www.elsevier.com/locate/jpedsurg

Letter to the Editor

New York's COVID-19 shelter-in-place and acute appendicitis in children☆,☆☆

To the Editor:

On March 20th, 2020, New York City and State went into shelter-in-place in response to the surge of novel coronavirus disease 19 (COVID-19) cases. Located in central Queens, our hospital experienced a flood of adult cases to our emergency department. In contrast, pediatric emergency department (PED) visits were reduced to 13% compared to the same period a year prior. In a recent article, Kvasnovsky et al described an unchanged number of pediatric appendicitis cases at a single tertiary pediatric referral center during COVID-19 pandemic [1]. Our experience at a large community-based hospital has been very different (Fig. 1). It would be instrumental for the authors to provide a breakdown of the numbers to identify patients presenting primarily to their institution and patients transferred in, and compare these numbers to years prior, as the number of cases may be confounded by pediatric care regionalization due to the COVID-19 epidemic [2].

The effects of New York's shelter-in-place orders on the incidence of disease are proving to be complex. It is expected and has been observed that infectious diseases will be affected by social isolation; as such, practice will reduce disease transmission. Similarly, accidental trauma, particularly related to outdoor activities, should also be decreased as children are confined to their households. Our experience with pediatric appendicitis is puzzling since this is not an entity whose incidence is expected to be dependent on social interaction. Our observation of a marked decrease in pediatric appendicitis cases presenting to our PED from our catchment area of the borough of Queens, NY, brings up several questions:

1) Are there environmental or social factors that play a role in the incidence of this surgical condition? Previous studies have implicated seasonal, regional, or altitude variations as risk factors in acute appendicitis [3]. Several hypotheses create debate on the exact etiology of this condition, yet we still do not fully understand this disease. An infectious disease etiology has been implicated as a cause, which, if this is the case, can explain the reduction in appendicitis cases at the community level during lockdowns.
2) What was the effect of public fear on the presentation of non-COVID diseases? Parental fear of seeking care during the pandemic is a potential contributing factor to this observed reduced incidence. Also, we expected a delay in appendicitis presentations and a consequent increase in complications. Interestingly, Kvasnovsky et al. reported no such observation.
3) Finally, to answer whether the lockdown and social isolation did indeed reduce the incidence of pediatric appendicitis, one must look beyond isolated data from singular children's hospitals as these data do not reflect the exact pediatric appendicitis rate. The answer to that question may be found in a large regional epidemiological study to identify the true incidence of appendicitis during the lockdown. It is feasible that re-direction of patient presentation may account for differing numbers at various institutions. However, if indeed lower rates are observed, an environmental implication on pediatric appendicitis should be explored.

Author contribution

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https://doi.org/10.1016/j.jpedsurg.2020.08.027

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☆ Funding/Support: None.
☆☆ Conflict of Interests: All authors have no conflict of interests to disclose

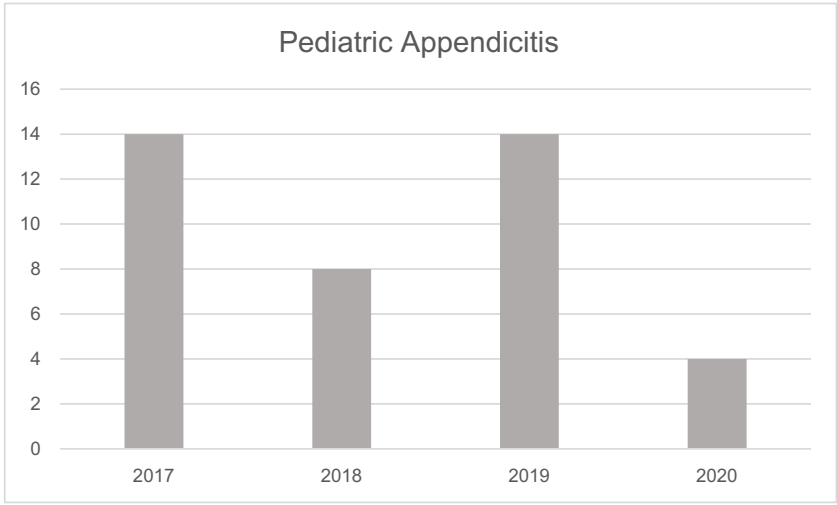

Fig. 1. Pediatric appendicitis (0–18 years) cases evaluated at the pediatric emergency department of New York Presbyterian Queens during the month of April for the years 2017–2020.