Birjand University of Medical Sciences

Journal of Surgery and Trauma

Editorial

Management of acute appendicitis in emergency departments during pandemic times: who are the most affected, children or adults?

Moshiur Rahman[1] ✉, Juan Santiago Serna-Trejos[2], Carlos Ivan Higuera-Cetina[3], Juan Camilo Chavarro-Gomez[4], Maria Fernanda Aristizabal[5], Bella Solarte-Martinez[6]

[1] Assistant Professor, Holy Family Red Crescent Medical College, Dhaka, Bangladesh
[2] University Libre, Cali, Colombia
[3] University of Boyaca, Tunja, Colombia
[4] Rafael Nunez University Corporation, Cartagena, Colombia
[5] National University of Colombia, Bogotá, Colombia
[6] University of Cartagena, Cartagena, Colombia

Corresponding Author:
Tel: +01713365274
Email: dr.tutul@yahoo.com

[DOI: 10.32592/jsurgery.2021.9.4.100]

Dear Editor

COVID-19 was the most important public health problem in the world during the years 2020 - 2021 (1). Its appearance and rapid global expansion caused an abrupt change in the management of diseases in all medical departments, due to the risk of contagion and death (2). The outcomes of acute surgical pathologies have been one of the main questions due to organizational modifications in hospitals, in order to control the dynamics of emergency and critical care for COVID-19 patients, leaving aside the approach and control of the surgical disease burden (3). Fear of infection, long distances, confinement, socioeconomic problems, and institutional restrictions were some of the aspects that most affected the flow of patients with diseases other than COVID-19, leading to delays in care (4). Appendicitis is the leading cause of acute surgical abdomen worldwide, occurring in approximately 10% of the population. Its age range of presentation is between 5 and 45 years, with male predominance (5). Considering the variability of the symptomatology, the rapidly progressive deterioration, and the limitations in the access to timely surgical services, its early diagnosis and management are indispensable (6). The delay in the management of this pathology constitutes an increase in the risk of perforation and peritonitis, which in turn can lead to sepsis and death (5-6). Considering the heterogeneity of the behavior of the pandemic among the different continents, and the response of the health systems and the community to this public calamity, it is not known with certainty which age group was the most affected with respect to appendicitis during this period of time.

Several authors have mentioned the challenge of analyzing gastrointestinal symptoms in pediatric patients when co-infected with SARS-Cov-2 (4). reported a case of acute appendicitis simulating a multisystemic inflammatory syndrome in a 9-year-old patient during the pandemic, which represented a challenge in its differential diagnosis. (7) Other authors evidenced that during coinfection with this virus, acute appendicitis developed in this age group, making its surgical approach difficult due to biosecurity measures and restrictions in access to diagnostic and therapeutic tools during this period of time (8). conducted a study in which they evaluated 55

Citation: Rahman M, Serna-Trejos JS, Ivan Higuera-Cetina C, Chavarro-Gomez JC, Fernanda Aristizabal M, Solarte-Martinez B. Management of acute appendicitis in emergency departments during pandemic times: who are the most affected, children or adults?. J Surg Trauma. 2021; 9(4):135-137.

Received: September 6, 2021 ***Revised: September 11, 2021*** ***Accepted: September 28, 2021***

children with acute appendicitis, where they found that 45.5% received conservative management, obtaining satisfactory results, reducing hospital stay and resource utilization (9). However, conducted a study describing the incidence of complicated appendicitis in children during the confinement period of the pandemic (10). The authors found that of 152 children, 38.9% had complicated appendicitis compared to 28.3% prior to the pandemic, with no significant differences in clinical manifestations, intensive care admission, hospital stay, or final outcomes (10). Therefore, it was concluded that there were no significant differences between the presentation, management, and outcomes before and during the pandemic in the management of acute appendicitis in children.

On the other hand, in adults, evidence suggests that there were significant differences in the management and outcome of acute appendicitis. conducted a cohort study where they compared two groups, one before the pandemic (149 people) and one during the pandemic (125 people), observing that compared to the year 2019, during the pandemic it was decided to perform more non-operative management (24.8% vs. 9.4%, p = 0.001) (11). Before the pandemic, 92.6% of the patients who received operative management underwent laparoscopic surgery; on the other hand, during the pandemic, only 69.1% received this management. The median hospital stay between the two periods decreased by 1 day, being lower during the pandemic (p = 0.03). Particularly during the pandemic, there was an increase in the use of computed tomography during the evaluation of this pathology (56% vs. 39.6%) (11). Other authors such as Brown et al, found that in 216 patients with acute appendicitis, there was a significant increase in white blood cell count (14.9 vs 13.3, p = 0.031), use of preoperative computed tomography (OR 3.013, 95% CI, 1.694 - 5.358, p < 0.001), appendectomies were more complex (AAST grade >1 - OR 2.102, 95% CI 1.155-3.826, p = 0.015) (12). However, no greater number of postoperative complications was observed. The authors concluded that delayed presentation and management of acute appendicitis were associated with more complex cases of appendicitis (12). Finally, studies that have synthesized the evidence have found that conservative management during these types of events, such as pandemics, is safe, with low complication and therapeutic failure rates (OR 0.36, p = 0.03) (13).

In this order of ideas, the adult population was more affected in terms of the approach and results of acute appendicitis. However, the heterogeneity of populations and contexts must be taken into account in order to interpret the difference between the estimates and the results of the different studies. It is necessary to design strategies that allow the specific flow of patients according to the specialty of their disease, the course of the disease, and the possible outcomes to be presented. Similarly, to create public policies that guarantee access to both basic and specialized surgical services in this type of public calamity.

Conflicts of interest

There is no conflict of interest.

References

1. Ojeda-Gutiérrez AM, Quiroz-Martínez MB, Ortega-Sierra MG, Mendoza-Castillo LF, Lozada-Martínez ID. A Commentary on "COVID-19 impact on Surgical Training and Recovery Planning (COVID-STAR) - A cross-sectional observational study". Int J Surg. 2021; 89:105957.

2. Maiguel-Lapeira J, Lozada-Martínez I, Torres-Llinas D, Garcia-Ballestas E, Moscote-Salazar L. Letter to the Editor Regarding: "COVID-19 and Neurosurgery Consultation Call Volume at a Single Large Tertiary Center with a Propensity-Adjusted Analysis". World Neurosurg. 2021; 147:220-221.

3. Gupta R, Gupta J, Ammar H. Impact of COVID-19 on the outcomes of gastrointestinal surgery. Clin J Gastroenterol. 2021; 14(4):932-946.

4. Puoti MG, Rybak A, Kiparissi F, Gaynor E, Borrelli O. SARS-CoV-2 and the Gastrointestinal Tract in Children. Front Pediatr. 2021; 9:617980.

5. Sandell E, Berg M, Sandblom G, Sundman J, Fränneby U, Boström L, et al. Surgical decision-making in acute appendicitis. BMC surgery. 2015;15:69.

6. Jones MW, Lopez RA, Deppen JG. Appendicitis. [Updated 2021 Aug 6]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2021 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK493193/

7. Al Lawati Z, Al Rawahi H, Al Yazidi LS. Acute appendicitis mimicking multisystem inflammatory syndrome in children: case report and review of the literature. J Paediatr Child Health. 2021; 57(3):461-462.

8. Prichard C, Canning M, McWilliam-Ross K, Birbari J, Parker W, Wasson L, et al. Case series of acute appendicitis association with SARS-CoV-2 infection. BMC Infectious Diseases. 2021; 21:217.

9. Kvasnovsky CL, Shi Y, Rich BS, Glick RD, Soffer SZ,

[DOI: 10.32592/jsurgery.2021.9.4.100]

Lipskar AM, et al. Limiting hospital resources for acute appendicitis in children: Lessons learned from the U.S. epicenter of the COVID-19 pandemic. J Pediatr Surg. 2021; 56(5):900-904.

10. Gaitero-Tristán J, Souto-Romero H, Escalada-Pellitero S, Espiñera-CR, Andina-Martín D, Espinosa-Góngora R, et al. Acute Appendicitis in Children During the COVID-19 Pandemic: Neither Delayed Diagnosis Nor Worse Outcomes. Pediatr Emerg Care. 2021; 37(3):185-190.

11. Pringle HCM, Donigiewicz U, Bennett MR, Walker E, Fowler GE, Narang S, et al. Appendicitis during the COVID-19 pandemic: lessons learnt from a district general hospital. BMC Surg. 2021; 21(1):242.

12. Brown C, Waterman J, El Hitti E, Luton O, Joseph A, Pollitt MJ, et al. Appendicitis in the COVID-19 era: a modern challenge for experienced hands. Ann R Coll Surg Engl. 2021; 103(7):481-486.

13. Emile SH, Hamid HKS, Khan SM, Davis GN. Rate of Application and Outcome of Non-operative Management of Acute Appendicitis in the Setting of COVID-19: Systematic Review and Meta-analysis. J Gastrointest Surg. 2021; 25(7):1905-1915.

[DOI: 10.32592/jsurgery.2021.9.4.100]