CASE SERIES

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Simultaneous acute appendicitis in identical twins

Israa Kannas, Ahmad Ghazal, Ghazal Al Shaghel, Linda Sultan

ABSTRACT

Introduction: Acute appendicitis is the most common abdominal emergency in many parts of the world. However, we report a rare case of simultaneous appendicitis in twins. Case Series: The identical twins were women in the third decade presented to emergency department within 36 hours of each other with general abdominal pain, vomiting, anorexia and fatigue for six hours. Furthermore, the second twin had fever and sweating. They underwent surgery, they both had appendicitis and appendectomies were done. They also made an excellent recovery. Conclusion: Identical twins are not only similar in the morphologic features, it seems to be that there is a heredity predisposition for diseases not only the chronic diseases but also the acute one such appendicitis.

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Keywords: Appendicitis, Monozygotic, Twins

How to cite this article

Kannas I, Ghazal A, Al Shaghel G, Sultan L. Simultaneous acute appendicitis in identical twins. Edorium Open 2018;1:100004Z95IK2018.

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Received: 13 October 2017
Accepted: 02 January 2017
Published: 06 January 2018

Article ID: 100004Z95IK2018

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doi: 10.5348/Z95-2018-4-CS

INTRODUCTION

Acute appendicitis is the most common abdominal emergency in many parts of the world. The lifetime risk has been estimated at almost 10% [1]. The incidence of appendicitis was strongly age dependent, peaking at 10–14 years [2].

Nevertheless, we report a rare case of simultaneous acute appendicitis in identical twins.

CASE SERIES

Case 1

A 30-year-old Caucasian female was presented to emergency department complaining of gradual, general, persistent and very severe abdominal pain associated with vomiting, anorexia and fatigue for six hours. She denied any fever, chills, sweating, diarrhea/constipation or urinary symptoms. Her past medical history was unremarkable.

Physical examination of the patient revealed normal pulse rate, blood pressure, respiratory rate and body temperature. The abdomen was soft, tenderness and rebound tenderness were noticed in the right iliac fossa. Mcburney, Rovsing and Psoas signs were positive.

Laboratory tests revealed increasing in neutrophils 85%, CRP 85.9 mg/l, ESR 67 mm for 1st hour, 111 mm for 2nd hour and decreasing in lymphocytes 9.6%, hemoglobin 8.5 g/dl, red blood cell count $3x10^6/cm^3$, hematocrit 26.2% and normal white blood cell count $5900/cm^3$, mean corpuscular volume 87 fl. Ultrasound was inconclusive (Figure 1).

The diagnosis was uncertain so that she had a laparoscopic surgery. She had appendicitis and appendectomy was done. She made an uneventful post-operative recovery and was discharged on the next postoperative day.

Case 2

It was surprising that the identical twin presented within 36 hours after her sister with the same complaints in addition to fever and sweating for six hours too. She denied any chills, diarrhea/constipation or urinary symptoms. She had no significant past medical history.

Physical examination of the patient was similar to her sister (Case 1) except that her body temperature was elevated 38.5°C.

Laboratory tests revealed increasing in neutrophils 78.5%, CRP 78.6 mg/l, ESR (57 mm for 1st hour, 103 mm for 2nd hour) and decreasing in hemoglobin 9.9 g/dl, red blood cell count $3.52x10^6/cm^3$, hematocrit 30.4% and normal white blood cell count $5500/cm^3$, mean corpuscular volume 86 fl. Ultrasound was inconclusive too (Figure 2).

The surgeon suspected appendicitis like her twin so that she had surgery and appendectomy was done. She also made a good postoperative recovery and was discharged on the second postoperative day.

DISCUSSION

Simultaneous cases of acute appendicitis are extremely rare and only five cases have been reported in literature [3]. All of the twins evaluated in the literature presented in the first or second decade within a day of each other. Although the South African twins presented slightly further apart, it is interesting that both were pyrexial and did not show leukocytosis [3].

Genetic factors have been implicated in the etiology of acute appendicitis [4]. Basta et al. demonstrated a familial aggregation and polygenic transmission pattern in a retrospective analysis of families of 80 patients with appendicitis when compared to families of matched controls [4]. The familial tendency to acute appendicitis may perhaps be explained by environmental factors such as a specific bacterial infection, certain food habits, or a genetic difference in resistance to bacterial infection [4]. However, the cause of appendicitis remains elusive and familial factors are of variable influence [1].

In our case report, the Caucasian twins were in the third decade and presented within 36 hours of each other. It was interesting that both complained of general abdominal pain and their abdominal examination was the same. They also showed normal white blood cell count but increasing in neutrophils.

The literature needs more reported cases of simultaneous appendicitis in monozygotic twins to deduce whether genetics or coincidence is responsible for this presentation [3].

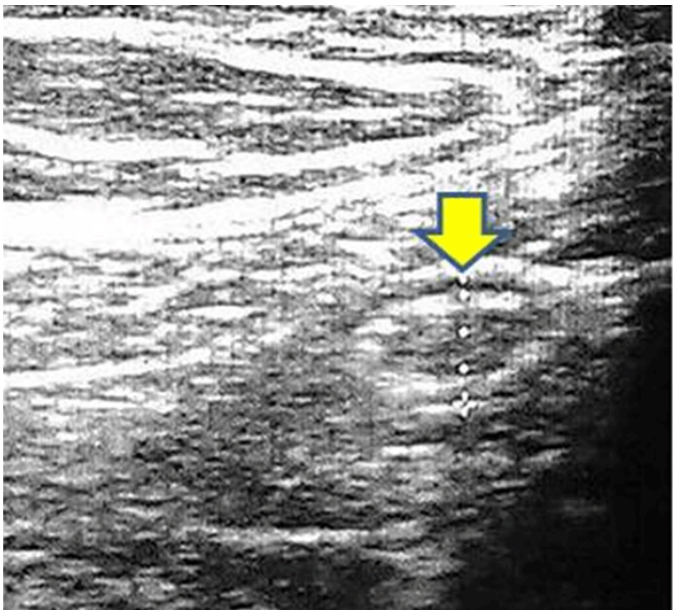

Figure 1: Ultrasonography showing non-thickened appendix of 5.7 mm diameter without surrounding infiltration (Case 1).

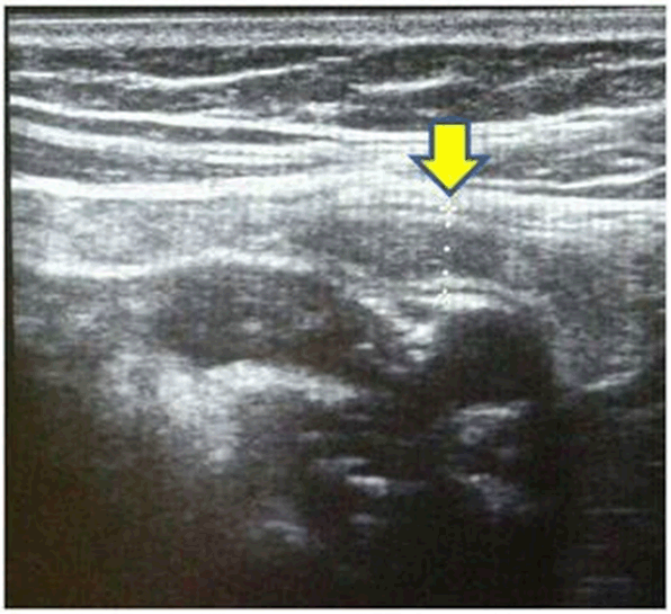

Figure 2: Ultrasonography showing non-thickened appendix of 5.1 mm diameter without surrounding infiltration (Case 2).

CONCLUSION

Identical twins are not only similar in the morphologic features, it seems to be that there is a heredity predisposition for diseases not only the chronic diseases but also the acute one such appendicitis. This raises question to the extent of acute diseases which twins may really have a genetic predisposition for it.

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Acknowledgments
We are thankful for Dr. Luma Haj Kassem, Department of Otology, Aleppo University Hospital, Aleppo, Syria for her contribution.

Author Contributions
Israa Kannas – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Ahmad Ghazal – Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Ghazal Al Shaghel – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Revising it critically for important intellectual content, Final approval of the version to be published
Linda Sultan – Acquisition of data, Drafting the article, Final approval to the version to be published

Guarantor of Submission
The corresponding author is the guarantor of submission.

Source of Support
None

Conflict of Interest
Authors declare no conflict of interest.

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