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Original Article

Adnexal torsion in children: The role of family practice physicians and paediatricians

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المخلص

أهداف البحث: يعد التواء المبائض من الحالات غير المألوفة التي تعرض ابتداء على أطباء الأطفال وأطباء الأسرة. يمكن إنقاذ المبيض في حال تم التشخيص مبكرا وبالتالي إنقاذ الخصوبة المستقبلية. وتهدف هذه الدراسة إلى تقييم الأعراض الأولية، وأسباب تأخر التشخيص، والمخرجات، وأساليب التشخيص المبكر الموصى بها لالتواء المبيض.

طرق البحث: تمت دراسة استعادية للأطفال في سن ١٨ فما دون من يناير ٢٠٠٤م إلى ديسمبر ٢٠١٣م. شملت البيانات المتحصل عليها من السجلات الطبية العمر، والأعراض الأولية، والمعالجات السابقة لأعراض مشابهة، والتأخر في طلب العلاج، والتاريخ المرضي، والنتائج السريرية، والاختبارات التشخيصية المعمولة، والتشخيص والعلاج.

النتائج: تم تجميع بيانات ١٥ مريضا، لكن توفرت السجلات الطبية لأحد عشر مريضا فقط من مرضى التواء المبيض للمراجعة الكاملة. كان متوسط العمر لمجموعة المرضى ٩،٩ +/- ٣،٥ عاما. كما كان ألم البطن الشكوى المقدمة لدى الجميع (١٠٠ ٪) بينما اشتكى ٨ مرضى (٧٢،٧ ٪) من القيء. وكان متوسط مدة الأعراض ٣٩،٧ +/- ٦٦ ساعة. عالج كل تخصص من بين أطباء الأطفال وأطباء الأسرة أربعة (٣٦،٣٪) مرضى. كان متوسط مدة التأخر لعرض المريض في المستشفى ٥٢+/- ٦٨،٧٨ ساعة، والتأخر في التشخيص والعلاج الجراحي بعد التنويم في المستشفى ٩،١ +/- ٢،٧ ساعة. اقتصرت الأدوات التشخيصية قبل العملية الجراحية على الأشعة الصوتية وأشعة تدفق الدم. وأظهر الاستكشاف الجراحي غرغرينة المبائض التي تم استئصالها بنجاح.

الاستنتاجات: نعتقد بأن أطباء الأطفال وأطباء الأسرة هم أول من يقوم بالتقييم الأولي لمرضى التواء المبيض وبالتالي ينبغي أن يكون لديهم درجة عالية من التوقع لتلك الحالات. وينبغي عليهم طلب الأشعة الصوتية وأشعة تدفق الدم في مرحلة مبكرة من التشخيص وإحالة المريض إلى مراكز العلاج المتخصصة حيث يمكن للتدخل الجراحي المبكر إنقاذ المبيض والحفاظ على الخصوبة مستقبلا.

الكلمات المفتاحية: ألم البطن؛ التواء المبيض؛ التأخر في طلب العلاج؛ طب الأسرة؛ أطباء الأطفال

Abstract

Objectives: Ovarian torsion (OT) is uncommon and is initially presented to paediatricians and family medicine physicians. The aim of this study is to assess the presentation, reasons for delayed diagnoses, outcomes, and recommended modalities for the early diagnosis of OT.

Methods: A retrospective study was carried out in children ≤18 years old from January 2004 to December 2013. The data gathered from medical records included age, presenting symptoms, prior treatment for the same symptoms, delays in presentations, past medical history, clinical findings, diagnostic tests performed, diagnoses and treatments.

Results: Although the data of 15 patients were collected, only 11 medical records of patients with adnexal torsion were available for complete review. The average age of the participants in this study was 9.9 ± 3.5 years. All patients complained of abdominal pain; whereas 8 (72.7%) patients presented with vomiting. The average duration of symptoms was 39.7 ± 66 h. Each discipline of general practitioners and paediatricians attended four (36.3%) children. The average delay of presentation to the hospital was 52 ± 68.78 h, and the average delay in diagnosis and final surgery after admission to the hospital was 9.1 ± 2.7 h. Ultrasound and Doppler imaging were the only diagnostic tools used for pre-operative diagnoses.

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Conclusions: We believe that paediatricians and general practitioners are the first line of physicians to initially assess patients with OT, and they should have a high index of suspicion while managing patients with OT. They should perform early ultrasound and Doppler and refer patients to tertiary care centres where early intervention could save the patients' ovaries and future fertility.

Keywords: Abdominal pain; Adnexal torsion; Delay in presentation; Family practice; Paediatricians

Introduction

Abdominal pain, fever and vomiting are probably the most common complaints in children presenting to a paediatrician, family practice and emergency room.[1,2] A single complaint is usually ignored as a minor ailment, but with right-sided abdominal pain acute appendicitis is a concern.[3,4] As the prevalence of ovarian torsion is 4.9 per 100,000 children,[5] it is often missed, and a delay in the time to final surgery risks the loss of an ovary. Abdominal pain is the most common symptom in children presenting with OT, but in an extensive review on acute abdominal pain, Leung and Sigalet[6] failed to mention adnexal torsion in the differential diagnosis. It was reported that in only <50% of the cases a correct diagnosis is made preoperatively.[7,8] At present, the consensus is to use Doppler ultrasonography for the early diagnosis of OT. Even with this recommendation, OT is not always considered in the differential diagnosis in children who present with abdominal pain, nausea and vomiting, and this delays the diagnosis.

The literature on the long-term effects of the removal of an ovary due to OT is limited. There is a belief that having a single ovary should not affect fertility, but studies have suggested that a single ovary cannot produce the same number of ova and hence fertility is affected. Al-Turki[9] found that patients who undergo salpingo-oophorectomy for OT have decreased fertility, and it is believed that an early diagnosis could save the ovary, thereby restoring complete fertility.

The objective of our case-series is to highlight the presentation of OT in children over the period of one decade, the delay in the diagnosis and the outcomes of children who presented with OT to recommend methods for the early diagnosis of OT.

Materials and Methods

King Fahd Hospital of the University, AlKhobar, is a teaching institution of the College of Medicine, University of Dammam, and is a 500-bed urban tertiary care hospital that covers a population of 2 million. After obtaining ethical approval from the Research and Ethical Committee of the University of Dammam and informed consent from the parents of the children, the study was started. Using the QuadraMed patients record system, patients with ICD-9-CM Diagnosis Code 620.5 (torsion of the ovary, ovarian pedicle, or fallopian tube) were identified. The medical record numbers were crosschecked with those of the admission, discharge and operating room log books. The data from the medical records was gathered on a predetermined proforma, which included information from the presentation of the patients until their discharge. Information about the referral to the hospital by another hospital or by parents, age, duration and symptoms, and treatment before presentation was also captured. The initial working diagnosis and laboratory investigations, including radiology (Doppler Ultrasound or computerized tomography), were documented. The final data were used to capture the delay of presentation to the hospital and the delay until surgery. The type of surgery and intra-operative findings were collected in detail.

The data were entered in the database and analysed using SPSS, Inc., Version19.

Results

Fifteen[14] patients were treated for adnexal torsion, but the data from 11 (73.3%) were complete. (Table 1) The average age at review was 11.7 ± 3.8 years and was 9.9 ± 3.5 years at presentation. Abdominal pain was the presenting complaint in all patients (100%), and vomiting was associated in 8 (72.7%) patients. Fever was present in 45.5% of the patients. The right side was involved in 7 (63.6%) patients. The duration of symptoms was 39.72 ± 66 h. General practitioners and paediatricians saw four (36.3%) children each, 2 (18.2%) patients were seen by obstetrics and gynaecologists, and the remaining 2 (18.2%) patients were seen by an ER physician and referred to paediatric surgery. The average delay of presentation to the hospital was 52 ± 68.78 h, and after admission, the delay in diagnosis and final surgery was 9.1 ± 2.7 h.

Ultrasound and Doppler imaging were the only diagnostic tools used for the diagnosis prior to surgery. Table 2 shows the comparison between right sided and left sided torsion: the patient age and delay in presentation was statistically significant and higher in cases of right-sided torsion. All children underwent open exploration and had gangrenous adnexa, which were removed.

Discussion

Our study shows that adnexal torsion, while a rare entity, is often diagnosed late. In our patients, general practitioners performed the initial management of nine out of eleven cases, and OT was never suspected. The second issue, which is significant in delaying diagnosis, was most common in patients with right sided adnexal torsion, as appendicitis was suspected because it is a more common problem than OT. In a study presented by Kao et al. (2011), 10 (14.28%) patients reported to the outpatient department with OT, and the rest reported to the paediatric surgery department, while all of our patients presented to the hospital.