THE CAUCASUS JOURNAL OF MEDICAL & PSYCHOLOGICAL SCIENCES
კავკასიის მედიცინის და ფსიქოლოგიის მეცნიერებათა ჟურნალი
КАВКАЗСКИЙ ЖУРНАЛ МЕДИЦИНСКИХ И ПСИХОЛОГИЧЕСКИХ НАУК
高加索医学与心理科学期刊

2025, Volume 3, Number 1-2 DOI 10.61699/cjmps-v3-i1-2-p45-54
eISSN 2720-8788
pISSN 2720-877X

ULTRASOUND DIAGNOSIS OF ACUTE APPENDICITIS IN CHILDREN (CASE REPORTS)

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ABSTRACT

Acute appendicitis (AA) is one of the most common causes of acute abdomen in children. Diagnosis of AA is still challenging. Delayed or missed diagnosis can lead to severe complications, including sepsis and even death. Ultrasound has been considered an option for the evaluation of suspected appendicitis in children; it is recommended as the first modality of choice for all age groups, especially in children, because of its safety. Timely and accurate ultrasonographic evaluation significantly contributes to early diagnosis and proper surgical management. We present the history of the disease and diagnostic value of ultrasound in children and three case reports of acute appendicitis: a 7-year-old male presented with right lower quadrant pain and fever, a 9-year-old male with nausea, vomiting, and lower abdominal pain and an 11-year-old female exhibited diffuse abdominal tenderness are presented

Acute appendicitis (AA) is the most common emergency pathology and may perforate in one-third of the cases if the diagnosis was delayed [17]. It is recognised as the leading cause of acute abdomen worldwide, with an incidence of 90–100 cases per 100,000 individuals annually and a lifetime risk of 7–12% [23]. In July 2015, the World Society of Emergency Surgery (WSES) organised in Jerusalem the first consensus conference on the diagnosis and treatment of AA in adult patients. An updated consensus conference took place in Nijemegen in June 2019 and the guidelines have now been updated and the definition of appendicitis was modified as inflammation of the appendix, causing

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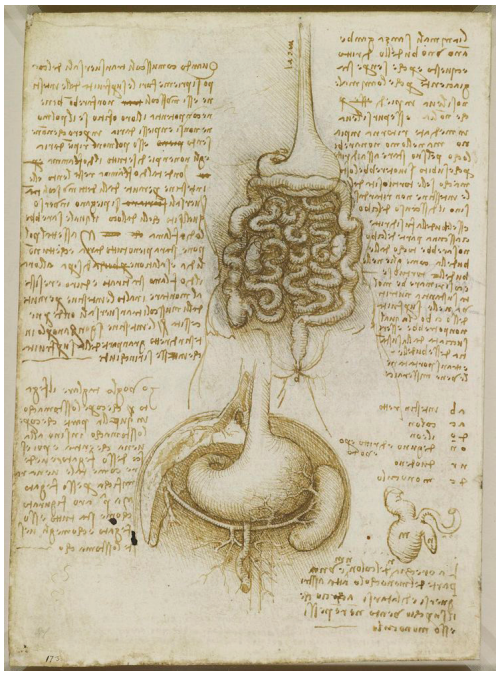
Keywords: Acute appendicitis, ultrasonographic evaluation, children

Cite: Tsereteli N.A., Mamatsashvili L.V., Dundua T.T. Ultrasound diagnosis of acute appendicitis in children (case-reports). *Cauc J Med &Psychol Sci*. 2025; V.3 (№ 1-2): 45-54; DOI 10.61699/cjmps-v3-i1-2-p 45-54

nausea, vomiting, and sharp pain in the right lower abdomen, appendicitis can lead to septic shock and other severe complications, including sepsis and even death [22]. According to the latest WHO data published in 2020 Appendicitis Deaths in Armenia reached 5 or 0.02% of total deaths; in Azerbaijan – 13 or 0.02% of total deaths; in Georgia (Caucasus) – 10 or 0.02% of total deaths [30]. The present study presents the brief history of appendicitis, discusses the diagnostic value of ultrasound in acute appendicitis in children and presents clinical cases.

The history of appendicitis is a fascinating subject. It reflects the development of abdominal surgery and the advances in managing acute abdominal conditions. It also demonstrates the accumulation of knowledge about one of the most common health issues affecting humanity. Despite its prevalence, there are few historical documents of this condition. The appendix's location—deep within the body—may explain this. Evidence suggests that the ancient Egyptians were aware of the appendix. Due to their practice of preserving organs in canopic jars during mummification, some jars have been discovered with the inscription 'worm of the bowel' [21]. Nevertheless, anatomical descriptions and treatment approaches for AA did not emerge until the Renaissance [10]. In the early 1490s, Leonardo da Vinci began filling notebooks related to four broad themes — painting, architecture, mechanics and human anatomy — creating thousands of pages of neatly drawn illustrations and densely penned commentary. In the notebook, related to human anatomy the first known anatomical drawing of the vermiform appendix made by Leonardo da Vinci (Fig. 1) was found [7, 29].



Picture 1 Leonardo Da Vinci (1452–1519), "The gastrointestinal tract, the stomach, liver and spleen" c. 1508 (Royal Collection) https://www.rct.uk/collection/. Public domain

The first detailed description of the appendix was reported by Andreas Vesalius (1514–1564). Vesalius referred to the appendix as "the blind intestine" and described it as "vermis in modo convolutus" (curled in the manner of a worm) [14]. Giovanni Battista Morgagni (1682–1771), "father of pathologic anatomy and pioneer of modern medicine," asserted that AA was the most common cause of peritonitis [6]. John A. Shepherd has reviewed the history of surgery for acute appendicitis through a careful search of early British journals and textbooks, identifying hidden or forgotten descriptions of successful operations for appendicitis in Great Britain between

1884 and 1890 [24]. Ever since the first report of appendicectomy in 1736, it has remained a puzzle as why some children are susceptible to appendicitis and others are not. Environmental factors, dietary habits and other factors could have an influence on predisposing certain children to appendicitis. Nevertheless, the exact etiology behind appendicitis still largely remains elusive [24,13]. Although few advancements have been made in the past decades, the causes of the disease remain poorly understood. Obtaining a confident preoperative diagnosis remains a challenge [4]. The incidence of AA has been declining steadily since the late 1940s. The epidemiological studies have reported decreasing trends in the incidence of acute appendicitis in children. Between 1963 and 1967 in England and Wales it was 3.11 cases per 1000 children aged 14 years and below; between 1993 and 1997 was 1.15 cases per 1000 children aged 14 years and below. This trend of decline has also been noted elsewhere in USA; between 2000 and 2007 a 9.7% reduction in inflamed (non-perforated) appendicitis from 1.0 to 0.94 cases per 1000 children [1]. Recent epidemiological and clinical data support the theory of two distinct pathological entities of appendicitis: simple non-perforated (in 92% of cases can be treated successfully with antibiotics) and complicated appendicitis (should be managed with emergency surgery) in children. To approach acute appendicitis, a lot of clinical scoring systems have been created, which are easily applicable to pediatric patients. However, clinical score systems (as PAS and Alvarado Score) currently in practice cannot predict which children with appendicitis should proceed directly to surgery. As a result, preoperative ultrasound (US) and/or low-dose CT scan imaging is recommended in all intermediate or high-risk patients to diagnose them properly [28]. As acute appendicitis with perforation is associated with significant morbidity and an increase in mortality [11], rapid and accurate diagnosis is required to treat all patients without unnecessary appendectomies. Moreover higher risk of acute myocardial infarction related to surgical removal of the tonsils and appendix before age 20 has been reported [12]. Subtle alterations in immune function following these operations may alter the cardiovascular risk [18, 12]. Despite improvements in clinical and laboratory diagnosis, the decision of whether to operate remains challenging, as symptoms are frequently nonspecific and overlap with those of various other diseases [25].

Traditional diagnostic ultrasound was developed in the 20th century [9]. Major importance in the diagnostic work-up of patients with suspected AA have gained imaging modalities. First introduced by J. B. Puylaert in 1986, Graded Compression Ultrasonography (US) has greatly improved the ability to diagnose acute appendicitis and reduced the number of negative surgical explorations for acute appendicitis [19,18]. This technique aims to reach deeper penetration by compressing and pushing the air away so as to visualize the appendix. The normal small bowel is compressible with air inside it, while acute appendicitis is non-compressible and rarely has air inside it. Over the years, this technique has been improved. Recently, it has been shown

that the diameter of the normal appendix (mean anteroposterior diameter 4.4 ± 0.9 mm, mean transverse diameter 5.1 ± 1.0 mm) does not change with age and is normally distributed in children [8]. Consequently, a diameter larger than 6 mm is suggestive of acute appendicitis in the proper clinical setting [2]. Trout et al. showed that an appendix diameter of 6 to 8 mm and more than 8 mm had the highest accuracy in diagnosing appendicitis (65%, 96%, respectively), while there was only 2.5% of appendicitis having a diameter of less than 6 mm. The authors concluded that this three-category interpretative scheme provides higher accuracy in the diagnosis of AA than traditional binary cut-offs of 6 mm [27]. There are other direct findings for diagnosing acute appendicitis, including the target sign, appendicolith, and hypervascularity with Doppler ultrasound. Other indirect findings include free fluids around the appendix, abscess formation, increased mesenteric fat echogenicity, enlarged local mesenteric lymph nodes, and increased peritoneal thickness [18]. Ultrasound results in acute appendicitis can be affected by the body mass of the patient, the thickness of the body wall, pain score as well as the experience of the operator [2]. Boonstra PA, et al. evaluated the implementation of the guideline "diagnostics and treatment in acute appendicitis" in 2010. This guideline states that, in every patient with clinically suspected acute appendicitis, an ultrasonography or CT scan is advised to confirm the diagnosis before surgery. They selected all consecutive patients with acute appendicitis in the hospital in the years 2008 and 2011 and compared the use of imaging and the operation results in both years. In 2008, 228 patients were treated for acute appendicitis. In 43 %, imaging was performed. In 2011, 238 patients were treated; in 99 % of the cases, imaging was performed. A decrease in patients with negative appendectomy was seen from 19 % in 2008 to 5 % in 2011. The study showed that the increased use of pre-operative imaging in patients with suspected acute appendicitis resulted in a decrease of patients with negative appendectomies [5]. S, Levy, et al., conducted a 2-year retrospective study on children admitted with acute appendicitis to determine whether specific ultrasonographic features can predict failure of conservative treatment of acute appendicitis. Those with uncomplicated appendicitis diagnosed solely by ultrasound, and treated conservatively, were followed 18-24 m to assess treatment outcome. Management was considered successful if recurrent acute appendicitis was not observed during follow-up. Appendix diameter, wall thickness, presence of mucosal ulceration, hyperechogenic fat, free fluid, and lymph nodes were evaluated as potential discriminatory ultrasonographic predictors. T-tests, chi-square, sensitivity, specificity, and odds ratios were calculated. The presence or absence of appendiceal mucosal ulceration at ultrasound can predict conservative management outcome in the setting of acute appendicitis, potentially improving pediatric patient selection for conservative management [15].

Based on the foregoing, acute appendicitis is one of the frequent causes of surgical intervention in children

presenting with acute abdominal pain. Due to atypical clinical presentations in the pediatric population, imaging modalities play a critical role in diagnosis. Ultrasound is widely accepted as the initial imaging tool because it is safe, noninvasive, and does not involve e ionizing radiation [3]. Like the rest of the bowel, on ultrasound, the normal appendix has five concentric layers of hyper-hypoechogenicity, namely: Hyperechoic serosa (outermost layer); Hypoechoic muscularis propria; Hyperechoic submucosa; Hypoechoic mucosa; Hyperechoic mucosal interface (innermost/luminal layer). Alexander V. Rybkin and Ruedi F Thoeni [20] reviewed the current imaging methods and diagnostic features of appendicitis. They defined the vermiform appendix as a blind-ended loop of bowel that arises from the cecum 3 to 4 cm below the ileocecal valve. Although the base of the appendix is relatively fixed, its tip usually is freely mobile. Therefore, the location of the appendix is highly variable. On the US the normal appendix appears as a blind-ending, tubular, compressible, non-peristaltic loop of bowel with its base adjoining the distal end of the caecum and a slightly inferior position to the terminal ileum and ileocaecal junction. It is also commonly inferior-medial to the right psoas muscle and right external iliac vessels. In rare cases, the appendix can be seen extending into the right hemipelvis or slightly higher in an ascending fashion towards the subhepatic region. [6; 20] The primary US features of complicated appendicitis include of complicated appendicitis include: an inflamed appendix measuring above 0.6 cm (usually above 1.0 cm) in AP calibre that can sometimes contain heterogeneous (purulent) materials; a loss of appendiceal wall stratification, particularly loss of the submucosal layer; the absence of wall vascularity; the presence of an appendicolith (usually large in size); the visualisation of an appendiceal wall defect or mucosal ulceration and some periappendiceal fluid; the presence of periappendiceal heterogeneous collection/abscess [15].

Acute appendicitis is one of the most frequent causes of surgical intervention in children presenting with acute abdominal pain. Due to atypical clinical presentations in the pediatric population, imaging modalities play a critical role in diagnosis.

We present three cases of the ultrasound findings suggestive of acute appendicitis: a 7-year-old male presented with right lower quadrant pain and fever, a 9-year-old male with nausea, vomiting, and lower abdominal pain and an 11-year-old female exhibited diffuse abdominal tenderness.

A retrospective analysis was conducted on pediatric patients diagnosed with acute appendicitis at our institution over a year. Ultrasound examinations were performed using high-frequency linear probes (5–12 MHz) in transverse and longitudinal planes. The key ultrasonographic criteria for diagnosing appendicitis included: a non-compressible, blind-ending tubular structure in the right lower quadrant. Outer appendiceal diameter >6 mm. Wall thickening >2 mm. Periappendiceal fluid collection. Echogenic periappendiceal fat. Presence of an appendicolith. Hypervascularity of the appendiceal wall on Doppler study. Each patient's

ultrasonographic findings were correlated with surgical and histopathological outcomes.

Case 1: A 7-year-old male presented with right lower quadrant pain and fever. Ultrasound revealed a blind-ending, non-compressible tubular structure measuring 8.4 mm in diameter with increased wall thickness and periappendiceal fat inflammation.

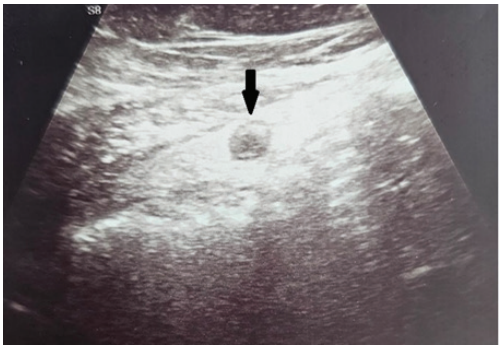


Figure 1. *Ultrasound image showing a dilated, non-compressible appendix measuring 8.4 mm in diameter with surrounding hyperechoic fat.*

Case 2: An 11-year-old female exhibited diffuse abdominal tenderness. Ultrasound showed an enlarged appendix (9.1 mm in diameter) with periappendiceal fluid.

Figure 2. *Transverse scan demonstrating a target sign appearance with central hypoechoic lumen and hyperechoic inflamed wall.*

Case 3: A 9-year-old male with nausea, vomiting, and lower abdominal pain. Ultrasound displayed an appendix 7.9 mm in diameter with wall thickening and localized fluid collection.

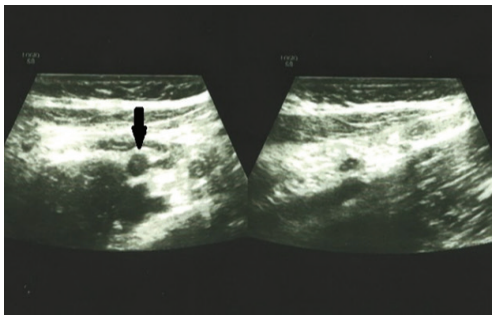


Figure 3. *Ultrasound image showing a non-compressible appendix with adjacent appendiceal lymphoid hyperplasia .*

Ultrasound (US) is valuable diagnostic tool in identifying acute appendicitis in children. Its timely application can significantly improve clinical outcomes by enabling early diagnosis and surgical intervention. It helps to avoid any delay in diagnosis and subsequent perforation of the appendix and unnecessary appendectomy. Graded-compression US should be the first-line imaging modality in paediatric patients with suspected appendicitis. Ultrasound is widely accepted as the initial imaging tool because it is safe, non-invasive, and does not involve ionizing radiation. The presented cases reinforce ultrasound's reliability in detecting both typical and complicated appendicitis.

References

1. Aarabi S, Sidhwa F, Riehle KJ, Chen Q, Mooney DP. Pediatric appendicitis in New England: epidemiology and outcomes. J Pediatr Surg. 2011;46(6):1106-1114. doi:10.1016/j.jpedsurg.2011.03.039
2. Abu-Zidan FM, Cevik AA. Diagnostic point-of-care ultrasound (POCUS) for gastrointestinal pathology: state of the art from basics to advanced. World J Emerg Surg. 2018;13:47. Published 2018 Oct 15. doi:10.1186/s13017-018-0209-y
3. Babington Emmanuel Abiola. Ultrasound Imaging of Appendicitis. Appendicitis - Causes and Treatments. / Elroy Weledji. Published: 11 January 2023 DOI: 10.5772/intechopen.1000840
4. Bhangu A, Søreide K, Di Saverio S, Assarsson JH, Drake FT. Acute appendicitis: modern understanding of pathogenesis, diagnosis, and management [published correction appears in Lancet. 2017 Oct 14;390(10104):1736. doi: 10.1016/S0140-6736(17)31502-7.]. Lancet. 2015;386(10000):1278-1287. doi:10.1016/S0140-6736(15)00275-5
5. Boonstra PA, van Veen RN, Stockmann HB. Less negative appendectomies due to imaging in patients with suspected appendicitis. Surg Endosc. 2015;29(8):2365-2370. doi:10.1007/s00464-014-3963-2
6. Castro BA, Novillo IC, Vázquez AG, Garcia PY, Herrero EF, Fraile AG. IMPACT OF THE APPENDICEAL POSITION ON THE DIAGNOSIS AND TREATMENT OF PEDIATRIC APPENDICITIS [published correction appears in Rev Paul Pediatr. 2020 Jan 17;38:e00012erratum. doi: 10.1590/1984-0462/;2019;37;2;00012erratum.. Novillo, Indalecio Can [corrected to Novillo, Indalecio Cano]. Rev Paul Pediatr. 2019;37(2):161-165. doi:10.1590/1984-0462/;2019;37;2;00012
7. Clayton M, Philo R. Leonardo da Vinci Anatomist. Royal Collection Publications, London, 2012
8. Coyne SM, Zhang B, Trout AT. Does appendiceal diameter change with age? A sonographic study. AJR Am J Roentgenol. 2014;203(5):1120-1126. doi:10.2214/AJR.13.12205
9. Dietrich CF, Bolondi L, Duck F, et al. History of Ultrasound in Medicine from its birth to date (2022), on occasion of the 50 Years Anniversary of EFSUMB. A publication of the European Federation of Societies for Ultrasound In Medicine and Biology (EFSUMB), designed to record the historical development of medical ultrasound. Med Ultrason. 2022;24(4):434-450. doi:10.11152/mu-3757
10. Guo X, Yang H, Zhao P, Li J, Zeng L, Wang C, Yang Y, Yang R. The application value of high-frequency ultrasound in the feasibility

assessment of endoscopic retrograde appendicitis therapy in children with appendicitis. Sci Rep. 2023 Nov 7;13(1):19291. doi: 10.1038/s41598-023-46387-3.

11. Humes DJ, Simpson J. Acute appendicitis. BMJ. 2006;333(7567):530-534. doi:10.1136/bmj.38940.664363.AE
12. Janszky I, Mukamal KJ, Dalman C, Hammar N, Ahnve S. Childhood appendectomy, tonsillectomy, and risk for premature acute myocardial infarction--a nationwide population-based cohort study. Eur Heart J. 2011;32(18):2290-2296. doi:10.1093/eurheartj/ehr137].
13. Jaya Kumar S, Shepherd G, Abubacker M, Rajimwale A, Fisher R, et al. Trends in Incidence of Acute Appendicitis in Children. 002 Acad J Ped Neonatol. 2017; 3(5): 555682. DOI: 10.19080/ AJPN.2017.03.555682
14. Lambert SW. Description of the Vermiform Appendix from the “de Fabrica” of Vesalius. Ann Med Hist. 1937;9(5):422-427
15. Levy S, Hiller N, Lev-Cohain N, Goldberg SN, Mizrahi I, Simanovsky N. Ultrasonographic features can predict outcome of conservative management of acute appendicitis in children. Emerg Radiol. 2022;29(1):59-65. doi:10.1007/ s10140-021-01984-5
16. Loveland JE. Reginald Heber Fitz, The Exponent of Appendicitis. Yale J Biol Med. 1937;9(6):509.b1-509. b520.
17. Matthew Fields J, Davis J, Alsup C, Bates A, Au A, Adhikari S, Farrell I. Accuracy of point-of-care ultrasonography for diagnosing acute appendicitis: a systematic review and meta-analysis. Acad Emerg Med. 2017; 24:1124–36
18. Mostbeck G, Adam EJ, Nielsen MB, et al. How to diagnose acute appendicitis: ultrasound first. Insights Imaging. 2016;7(2):255-263. doi:10.1007/s13244-016-0469-6
19. Puylaert JB. Acute appendicitis: US evaluation using graded compression. Radiology. 1986;158:355–60;
20. Rybkin AV, Thoeni RF. Current concepts in imaging of appendicitis. Radiol Clin North Am. 2007;45(3):411-vii. doi:10.1016/j. rcl.2007.04.003
21. Salahuddin SM, Ayaz O, Jaffer M, Naeem R, Tikmani SS, Mian AI. Pediatric Appendicitis Score for Identifying Acute Appendicitis in Children Presenting With Acute Abdominal Pain to the Emergency Department. Indian Pediatr. 2022 Oct 15;59(10):774-777
22. Di Saverio S, Podda M, De Simone B, et al. Diagnosis and treatment of acute appendicitis: 2020 update of the WSES Jerusalem guidelines. World J Emerg Surg. 2020;15(1):27. Published 2020 Apr 15. doi:10.1186/s13017-020-00306-3
23. Selvaggi L, Pata F, Pellino G, et al. Acute appendicitis and its

treatment: a historical overview. Int J Colorectal Dis. 2025;40(1):28. Published 2025 Jan 30. doi:10.1007/s00384-024-04793-7

24. Shepherd JA. Acute appendicitis: a historical survey. Lancet. 1954;267(6833):299-302. doi:10.1016/s0140-6736(54)90236-6
25. Shogilev DJ, Duus N, Odom SR, Shapiro NI. Diagnosing appendicitis: evidence-based review of the diagnostic approach in 2014. West J Emerg Med. 2014;15(7):859-871. doi:10.5811/westjem.2014.9.21568
26. Trout AT, Sanchez R, Ladino-Torres MF, Pai DR, Strouse PJ. A critical evaluation of US for the diagnosis of pediatric acute appendicitis in a real-life setting: how can we improve the diagnostic value of sonography?. Pediatr Radiol. 2012;42(7):813-823. doi:10.1007/s00247-012-2358-6
27. Trout AT, Towbin AJ, Fierke SR, Zhang B, Larson DB. Appendiceal diameter as a predictor of appendicitis in children: improved diagnosis with three diagnostic categories derived from a logistic predictive model. Eur Radiol. 2015;25(8):2231-2238. doi:10.1007/s00330-015-3639-x
28. K.Tzortzopoulou A. Diagnosing acute appendicitis in children: the role of diagnostic scores. Appendicitis - Current Insights, IntechOpen, 4 Jan. 2025. Crossref, doi:10.5772/intechopen.1008455
29. https://www.history.com/articles/leonardo-da-vinci
30. https://www.worldlifeexpectancy.com/georgia-appendicitis

РЕЗЮМЕ

УЛЬТРАЗВУКОВАЯ ДИАГНОСТИКА ОСТРОГО АППЕНДИЦИТА У ДЕТЕЙ (КЛИНИЧЕСКИЕ СЛУЧАИ)

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Диагностика острого аппендицита (ОА) остается сложной задачей. Несвоевременная диагностика приводит к серьезным осложнениям и летальному исходу. Ультразвуковое исследование брюшной полости часто используется для диагностики аппендицита у детей, так как является безопасным и неинвазивным методом; оно не требует использования ионизирующего излучения, позволяет динамически визуализировать органы брюшной полости; рекомендуется в качестве метода первого выбора при диагностике для всех возрастных групп, особенно для детей. Своевременное и точное ультразвуковое исследование способствует ранней диагностике и успешному хирургическому лечению. Нами

представлена краткая история ультразвукового исследования, а также три случая острого аппендицита: у 7-летнего мальчика наблюдались боль в правом подреберье и повышение температуры, у 9-летнего мальчика – тошнота, рвота и боли внизу живота, а у 11-летней девочки – диффузные болезненные ощущения в животе.

Ключевые слова: острый апедицит, ультразвуковое исследование детей

რეზიუმე

მწვავე აპენდიციტის ულტრაბგერითი დიაგნოსტიკა ბავშვებში (შემთხვევების აღწერა)

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[1] მ. იაშვილის სახელობის ბავშვთა ცენტრალური საავადმყოფო, თბილისი, საქართველო.
[2] კავკასიის სამედიცინო ცენტრი, თბილისი, საქართველო. [3]საქართველოს უნივერსიტეტი, თბილისი, საქართველო; კლინიკა კორტექსი, თბილისი, საქართველო.

მწვავე აპენდიციტი (მა) ბავშვებში მუცლის მწვავე ტკივილის ერთ-ერთი ყველაზე გავრცელებული მიზეზია. მა-ს ზუსტი დიაგნოზის დასმა ჯერ კიდევ სირთულეებთან არის დაკავშირებული. დაგვიანებულმა ან არასწორმა დიაგნოზმა შეიძლება გამოიწვიოს სერიოზული გართულებები, მათ შორის სეფსისი და ლეტალური შედეგიც კი. ბავშვებში ულტრასონოგრაფიული კვლევა აპენდიციტზე ეჭვის დადასტურების უტყუარი მეთოდია და რეკომენდებულია, როგორც დიაგნოსტირების უპირველესი არჩევანი ყველა ასაკობრივი ჯგუფებისთვის; განსაკუთრებით კი ბავშვებში; მისი უსაფრთხოებიდან გამომდინარე. დროული და ზუსტი ულტრაბგერითი კვლევა მნიშვნელოვნად უწყობს ხელს ადრეულ დიაგნოზის დასმას და სწორ ქირურგიულ ჩარევას. წარმოგიდგენთ ბავშვებში ულტრაბგერითი კვლევის ისტორიას და დიაგნოზის დასმისთვის მის მნიშვნელობას, ასევე, აღვწერთ მწვავე აპენდიციტის სამ შემთხვევას: 7 წლის ბიჭი მუცლის მარჯვენა ქვედა მხარეს ტკივილით და ცხელებით, 9 წლის ბიჭი გულისრევით, ღებინებითა და მუცლის ქვედა ნაწილში ტკივილით და 11 წლის გოგონა აბდომინალური დიფუზური მგრძნობელობით.

საკვანძო სიტყვები: მწვავე აპენდიციტი, ულტრასონოგრაფიული კვლევა, ბავშვები.