

**NEW STRUCTURAL ASPECTS ON PATHOLOGIC APPENDIX VERSUS NORMAL APPENDIX**

<sup>1</sup>Faculty of Medicine, Transilvania University of Brașov (Romania),

<sup>2</sup>University of Manchester (United Kingdom)

\*Antonella Cheșcă – Head of Imagistics Lab. at Lung Phthysiology Hospital (Brașov, Romania);  
e-mail: anto.chesca@gmail.com

Appendix pathology brings together different forms and is found in different age segments. Most susceptible to disease are children. In this context, the children and young people Appendix pathology may be complicated or can be accompanied by damage to adjacent organs, located in the abdominal cavity.

This morphological study presents the structural aspects of normal appendix and the ulcerated appendicitis. For observation of structural aspects, has been used classic stainings. It also shows the appendix using immunohistochemical technique.

*Key words:* appendix, appendicitis, structure, analysis

Appendix pathology is common in young children but being frequently exposed to the risk of this condition. According to studies it was observed installing a flare according to the seasonal period [2, 18]. In this context, nutrition and stress, configuring individual's lifestyle matters in the occurrence of acute appendicitis [3, 7]. Also demographic factor and genetic profile of the individual are factors which contribute to this pathology installation. With the first signs and symptoms that advocates for acute appendicitis, the patient must be addressing any medical specialty services [19, 22]. Interdisciplinary medical emergency team, aims to involve for a proper diagnostic [1, 11]. The method of laboratory diagnostics together with imaging methods such as ultrasound or computed tomography, are useful for a well diagnostic [4, 12].

Of course imaging methods aimed at informing the diagnostic accuracy of acute appendicitis, avoiding a false diagnosis [5, 8]. From this point of view, will track the removal of other signs and symptoms that may mimic appendicitis [15]. It is envisaged and competent examination of the abdominal region where they are routinely positioned appendix, to identified correct position of the appendix [14]. In the particular context of appendix positioning know, besides the right iliac fossa [17]. It also is considering removing elimination of acute appendiceal pathology connected with acute gynecologic pathology, especially the young [20]. According to data taken from medical literature, they were recorded cases of appendicitis in young women's, who required emergency appendectomy practice [6, 10]. For diagnosis, corroborating signs and symptoms of clinical laboratory data, leading to practice curative surgery [9, 16].

Macroscopic examination of the operatory piece, followed by microscopic analysis, confirm the type of acute appendicitis, ulcers, or gangrenous phlegmon, with possible confounding local complications that could affect the patient's life [21].

From this point of view, preventive measures, informative programs with educational purposes, may interfere with the lifestyle of patients and to delay the time to occurrence of an exacerbation of acute appendicitis [13]. In context, the management of this condition is important both preoperatively and postoperatively as well.

**MATERIALS AND METHODS**

To achieve this material was chased surgical clinical diagnosis. It is composed of combination of acute appendicitis and colitis bracket peritoneal hemorrhagic necrosis. For the study was used as a biological product, appendix and fragment bracket. From a macroscopic viewpoint, was observed operative piece, which is represented by 50 mm long appendix, purple, accompanied by a second fragment sent. Histopathological diagnosis established after analyzing of excised intraoperatively piece, refer to appendix with bleeding ulcers mucosal edema and stasis subseries, accompanied by peritoneal reshuffle fibroconjunctiva fragment, infiltrate and hemorrhagic necrosis.

**RESULTS AND DISCUSSIONS**

In the following, they will describe some structural features related to normal and pathological appendix. Histologically, in appendix shows the outside and serous epithelial lining is made and corium. Type of epithelium is simple cylindrical, cells occurring absorbent and fewer goblet cells. Corion shows Lieberkuhn glands and

lymphoid tissue. The structural elements of the appendix show some particularities, according to the form of appendicitis. Figure 1 shows the structural aspect of normal appendix. The section from Figure 1 is the typical appearance of mucous layer. Also we can see appendix muscle part with two continuous layers, internal circular and external longitudinal. Formations observed in muscle venous vascular type, thin walled, of different sizes, containing inside blood type structures (fig. 1). Figure 2 shows in detail, the lining of the appendix. On this picture is seen besides those mentioned above, the structural aspect of goblet cells (fig. 2). Figure 3 performed by immunohistochemical technique, show specific

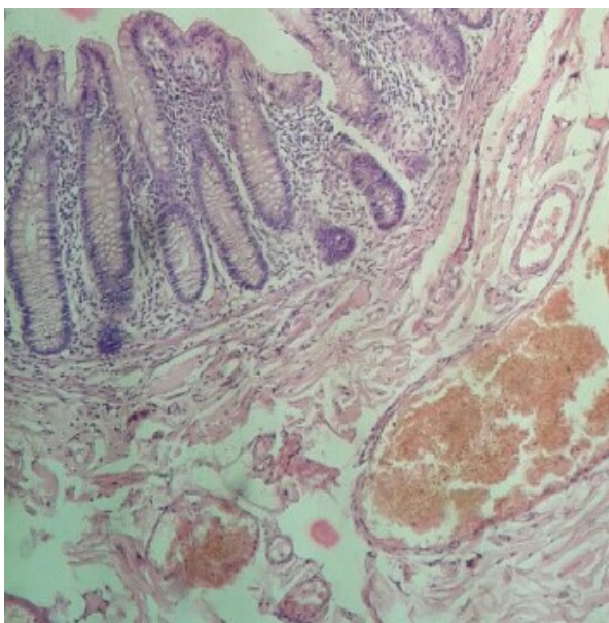


Figure 1 – Normal Appendix. H&E staining

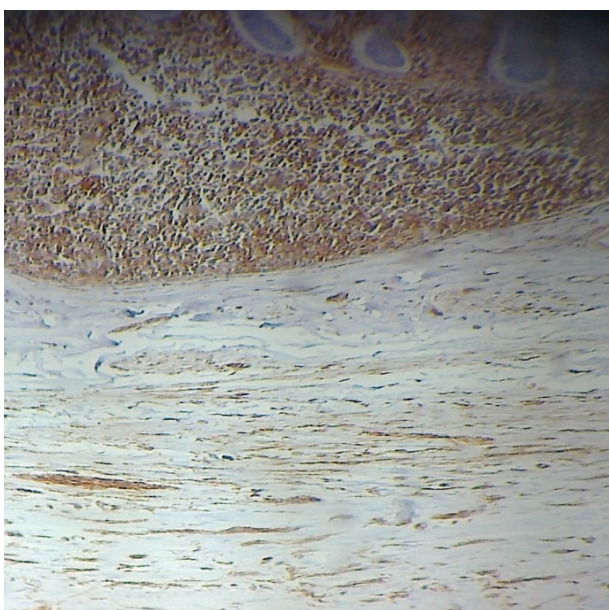


Figure 3 – Normal Appendix IHC

structural elements of appendix. On this image can be seen characteristics lymphoid follicle, will ing as a crown and extending into the submucosa, so muscle lining it is not observed (fig. 3). In the following we will present some pictures showing specific structural aspects of ulcerated appendicitis. Figure 4 shows the specific issue of lymphoid follicles, ulcerated mucosa and muscle of appendix (fig. 4).

Figure 5 shows in detail the structural aspect referring to mucosa of ulcerated appendicitis. On this section, there are no important differences compared to conventional structural aspect of the appendix (fig. 5). Figure 6 shows in detail the appearance of lymphoid follicle, the muscle

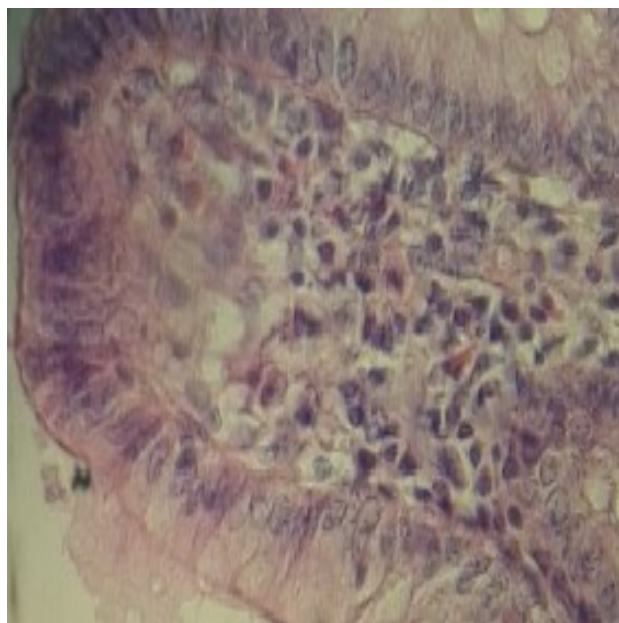


Figure 2 – Normal Appendix. H&E staining

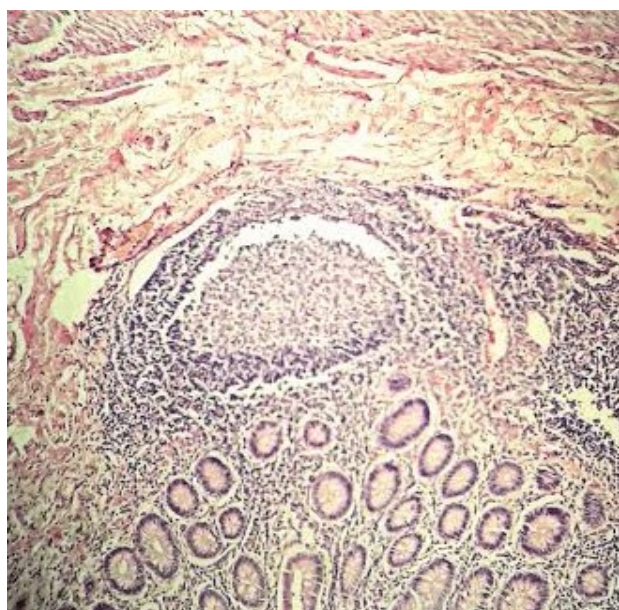


Figure 4 – Ulcerate Appendix. H&E staining

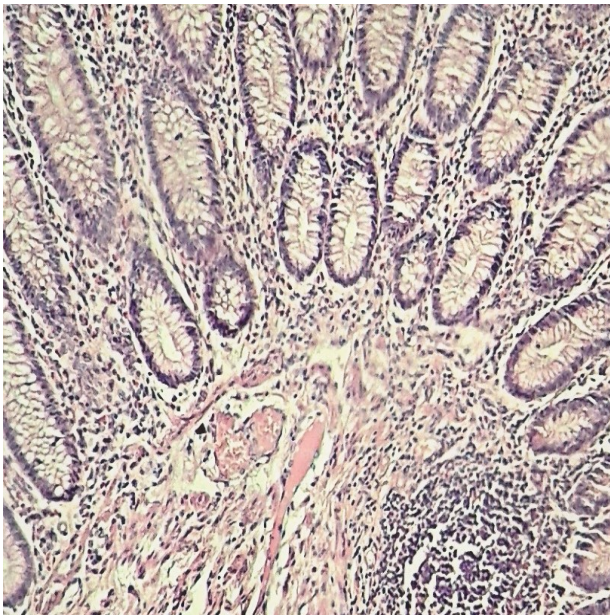


Figure 5 – Ulcerate Appendix. H&E staining

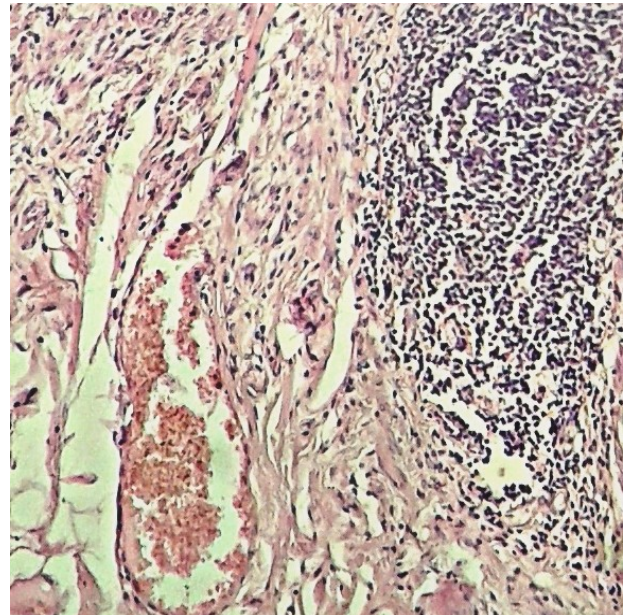


Figure 6 – Ulcerate Appendix. H&E staining

with two layers specific muscle and blood vessels of venous type. Described refers to specific appendix for ulcerated appendicitis. (fig. 6).

### CONCLUSIONS

In any form of appendicitis is required after surgical excision histological analysis of the operative piece.

Any microscopic analysis is preceded by microscopic analysis of the operative piece.

For structural analysis is useful comparison with histological structural issues. Also immunohistochemical technique successfully complete morphological analysis of the appendix, either normal or pathological.

### REFERENCES

1 Akbulut S. Unusual histopathological findings in appendectomy specimens: a retrospective analysis and literature review /S. Akbulut, M. Tas, N. Sogutcu //World J. Gastroenterol. – 2011. – V. 17(15). – P. 1961-1970.

2 Brown M. A. Imaging acute appendicitis //Semin Ultrasound CT MR. – 2008. – V. 29 (5). – P. 293-307.

3 Emre A. Routine histopathologic examination of appendectomy specimens: retrospective analysis of 1255 patients /A. Emre, S. Akbulut, Z. Bozdag //Int. Surg. – 2013. – V. 98(4). – P. 354-362

4 Fingerhut A. Appendicitis or non-specific pain in the right iliac fossa? /A. Fingerhut, E. Yahouchy-Chouillard, J. C. Etienne //Rev. Prat. – 2001. – V. 51(15). – P. 1654-1666.

5 Garcia Peña B. M. Selective imaging strategies for the diagnosis of appendicitis in chil-

dren /B. M. Garcia Peña, E. F. Cook, K. D. Mandl //Pediatrics. – 2004. – V. 113. – P. 24-28.

6 Grönroos J. M. A fertile-aged woman with right lower abdominal pain but unelevated leukocyte count and C-reactive protein. Acute appendicitis is very unlikely /J. M. Grönroos, P. Grönroos //Langenbecks Arch. Surg. – 1999. – V. 384(5). – P. 437-440.

7 Grönroos J. M. Clinical suspicion of acute appendicitis is the time ripe for more conservative treatment? //Minim. Invasive Ther. Allied Technol. – 2011. – V. 20(1). – P. 42-45.

8 Hasbahçeci M. Effect of surgeon's judgement on the diagnosis of acute appendicitis /M. Hasbahçeci, C. Erol, M. Törü //Ulus. Cerahi. Derg. – 2014. – V. 30(1). – P. 22-27.

9 Hedyia M. S. Histopathological findings in appendectomy specimens: a retrospective clinicopathological analysis /M. S. Hedyia, M. M. Nasr, H. Ezzat //J. Egypt. Soc. Parasitol. – 2012. – V. 42(1). – P. 157-164.

10 Hussain A. What is positive appendicitis? A new answer to an old question. Clinical, macroscopical and microscopical findings in 200 consecutive appendectomies /A. Hussain, H. Mahmood, T. Singhal //Singapore Med. J. – 2009. – V. 50(12). – P. 1145-1149.

11 Ilves I. Seasonal variations of acute appendicitis and nonspecific abdominal pain in Finland /I. Ilves, A. Fagerström, K. H. Herzig //World. J. Gastroenterol. – 2014. – V. 20(14). – P. 4037-4042.

12 Kosloske A. M. The diagnosis of appendicitis in children: outcomes of a strategy based on pediatric surgical evaluation /A. M.

Kosloske, C. L. Love, J. E. Rohrer //Pediatrics. – 2004. – V. 113. – P. 29-34.

13 Kraemer M. Macroscopic assessment of the appendix at diagnostic laparoscopy is reliable //M. Kraemer, C. Ohmann, R. Leppert //Endosc. – 2000. – V. 14(7). – P. 625-633.

14 Lee S. L. Ultrasonography and computed tomography in suspected acute appendicitis /S. L. Lee, H. S. Ho //Semin Ultrasound CT MR. – 2003. – V. 24(2). – P. 69-73.

15 Ortega-Deballon P. Usefulness of laboratory data in the management of right iliac fossa pain in adults /P. Ortega-Deballon, J. C. Ruiz de Adana-Belbel, A. Hernández-Matías //Dis. Colon. Rectum. – 2008. – V. 51(7). – P. 1093-1099.

16 Phillips A. W. Should the macroscopically normal appendix be removed during laparoscopy for acute right iliac fossa pain when no other explanatory pathology is found? /A. W. Phillips, A. E. Jones, K. Sargen //Surg. Laparosc. Endosc. Percutan. Tech. – 2009. – V. 19(5). – P. 392-394.

17 Ramarajan N. An interdisciplinary initiative to reduce radiation exposure: evaluation of appendicitis in a pediatric emergency department with clinical assessment supported by a staged ultrasound and computed tomography pathway /

N. Ramarajan, R. Krishnamoorthi, R. Barth // Acad. Emerg. Med. – 2009. – V. 16(11). – P. 1258-1265.

18 Sadr Azodi O. Genetic and environmental influences on the risk of acute appendicitis in twins /O. Sadr Azodi, A. Andrén-Sandberg, H. Larsson //Br. J. Surg. – 2009. – V. 96(11). – P. 1336-1340.

19 Stephen A. E. The diagnosis of acute appendicitis in a pediatric population: to CT or not to CT /A. E. Stephen, D. L. Segev, D. P. Ryan //J. Pediatr. Surg. – 2003 – V. 38(3). – P. 367-371.

20 Teh S. H. Should an appendix that looks 'normal' be removed at diagnostic laparoscopy for acute right iliac fossa pain? /S. H. Teh, S. O'Ceallaigh, J. G. Mckeon //Eur. J. Surg. – 2000. – V. 166 (5). – P. 388-389.

21 Velanovich V. General Surgery Service, Madigan Army Medical Center, Tacoma, WA 98431 /V. Velanovich, R. Satava //The American Surgeon. – 1992. – V. 58(4). – P. 264-269

22 Yilmaz M. Unusual histopathological findings in appendectomy specimens from patients with suspected acute appendicitis /M. Yilmaz, S. Akbulut, K. Kutluturk //World J. Gastroenterol. – 2013. – V. 19(25). – P. 4015-4022.

Received 05.07.2021

*Т. Сэндл\**

*ФУНКЦИОНАЛЬНАЯ ДИАГНОСТИКА ПАТОЛОГИИ ЛЕГКИХ*

<sup>1</sup>Bio Products Laboratory (Соединенное Королевство Великобритании)

\*Тим Сэндл – научный сотрудник лаборатории биопродуктов (Великобритания); электронная почта: pseudomonas@btinternet.com

---

В статье осуществлен анализ исследований, проведенных для контроля дыхательной функции при патологии легких. С этой точки зрения, хроническая обструктивная болезнь легких находится в центре внимания при исследовании дыхательной функции легких. Помимо теоретических данных, в статье описан анализ исследования неоднородной группы больных, которым была выполнена спирометрия, описаны результаты обследования пациентов, у которых регистрировались симптомы хронической обструктивной болезни легких, и которые обращались за медицинской помощью в определенный период времени.

*Ключевые слова:* факторы риска, болезни, этиопатогенетические механизмы, диагностика, профилактика, скрининг, мониторинг

*Т. Сэндл\**

*ӨКПЕ ПАТОЛОГИЯСЫНЫҢ ФУНКЦИОНАЛДЫ ДИАГНОСТИКАСЫНЫҢ МҮМКІНДІКТЕРІ*

<sup>1</sup>Bio Products Laboratory (Ұлыбритания Біріккен Корольдігі)

\*Тим Сэндл – Bio Products зертханасының зерттеушісі (Ұлыбритания); электрондық пошта: pseudomonas@btinternet.com

Мақалада өкпе патологиясы кезінде тыныс алу функциясын бақылу үшін жүргізілген зерттеулердің талдауы келтірілген. Осы көзқарас тұрғысынан алып қарағанда өкпенің созылмалы обструктивті ауруы өкпенің тыныс алу функциясын зерттеу кезінде басты назарға алынған. Теориялық мәліметтермен қатар, мақалада бір текті емес науқастар тобын зерттеудің талдауы сипатталған, онда спирометрия орындалған, өкпенің созылмалы обструктивті ауруы тіркелген және белгілі бір кезеңде медициналық көмекке жүгінген пациенттерді зерттеудің нәтижелері берілген.

*Кілт сөздер:* тәуекел факторлары, аурулар, этиопатогенетикалық тетіктер, диагностика, профилактика, скрининг, мониторинг.