

Rasakumar T., Houjeiry N.

**MORPHOLOGICAL SPECTRUM OF APPENDICITIS: A POST-APPENDECTOMY
HISTOPATHOLOGICAL ANALYSIS**

Tutor: PhD, Associate professor Dmitrieva M.V.

*Department of Pathological Anatomy and Forensic Medicine with a course of advanced training
and retraining*

Belarusian State Medical University, Minsk

Relevance. Appendicitis is defined as the acute or chronic inflammation of the vermiform appendix, a finger-shaped tubular structure attached to the caecum (the beginning of the large intestine). According to the Global Burden of Disease 2021 study (GBD), the total global new cases amount is 17 million. Its incidence rate is the highest in the Asia Pacific region (0,36%) and the lowest in Western Sub-Saharan Africa (0.08%). As an example, Sri Lanka, a 2024 study from the national hospital reported that among 94 patients, 64% were male and 69% were aged between 15 and 30 years.

Aim: the aim of this study is to differentiate the various histological types of appendicitis in resected specimens and correlate them with macroscopic features, patient demographics, and specimen characteristics.

Materials and methods. Appendiceal biopsies from 74 patients (obtained from different hospitals in Minsk) were analyzed. Histological slides were processed using the Hematoxylin and Eosin (H&E) staining technique and evaluated under light microscopy.

Results and discussion. A detailed histological study was conducted on patients, comprising 37 females (50%) and 37 males (50%), resulting in a female-to-male ratio of 1:1. The patients' ages ranged from 18 to 80 years with a mean age $39,6 \pm 17,9$ years. According to the pathological characteristics of appendicitis, 91,9% (68 cases) were diagnosed with acute appendicitis. Cases with acute inflammation morphologically distributed as follows: simple, superficial, phlegmonous, and gangrenous. Simple appendicitis with inflamed edematous congested appendix without necrosis or rupture was found in 7,3% (5 cases). Superficial appendicitis characterized by minimal gross changes showing only congestion, mild swelling and hyperemic vessels on serosal surface was revealed in 7,3% (5 cases). Focal neutrophilic infiltration of the mucous membrane was observed in such slides. Phlegmonous appendicitis 67,6% (50 cases) characterized by severe, transmural neutrophilic infiltration and marked swelling throughout all layers of the appendix, some of them showed ulceration 54,7% (23 cases). Phlegmonous appendicitis was diagnosed by the obligatory involvement of the serous membrane, which becomes dull, with deposits of fibrinous-purulent exudate on the surface. Finally, gangrenous transmural necrosis of tissue in 33,8% (23 cases) was revealed, some with perforation 34,7% (8 cases), and necrosis 17,3% (4 cases). Some cases showed progression in severity with the following complications: abscess formation 10,3% (7 cases), and empyema 1,5% (1 case). And 8,1% (6 cases) were diagnosed with chronic appendicitis with predominance of mononuclear cells (lymphocytes) and significant mural fibrosis and scarring. As for mixed one, no cases were registered.

Conclusions. As a result of this study, it was revealed that appendicitis develops equally in women and men in Minsk. Acute appendicitis was diagnosed in the majority of cases in this analysis (91,9%). Phlegmonous appendicitis is the most frequently observed type (67.6%) and were dangerous due to the development of local peritonitis.