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First results of modified diagnostic scale use for patients with possible appendicitis

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Background: Acute appendicitis is still a diagnostic challenge. Different scoring systems are designed to aid in the diagnosis of this common disease, including Alvarado score, recent appendicitis inflammatory response score, etc. Ultrasonography is widely used imaging modality that increases diagnostic accuracy, but false negative result rate is relatively high, leading to increased risk of misdiagnose acute appendicitis. Limitations of this diagnostic method led us to development of new diagnostic scale.

Materials & Methods: Retrospective study of 231 proved acute appendicitis cases was performed to detect the most sensitive and specific clinical signs and lab parameters. Using this data and statistical analysis, we developed diagnostic scoring system, that included clinical signs, blood test and ultrasonography results. Prospective study included 43 consecutive patients with suspected acute appendicitis. Physical examination, ultrasound, laparoscopy and appendectomy were performed by the same surgeon. Diagnosis of appendicitis was confirmed or excluded histologically in all specimens.

Results: Our scoring system allowed to diagnose appendicitis in 27 of 28 histologically proven cases, to exclude it correctly in 14 of 15 cases. According to protocol, four patients with equivocal diagnostic scale result underwent laparoscopy that diagnosed appendicitis in one case (false-negative result). Histology didn't confirm acute appendicitis in one case (false-positive result). Diagnostic scale sensitivity was 96.4%, specificity 93.3%, accuracy 95.3%, positive predictive value 96.4%, negative predictive value 93.3%. Negative appendectomy rate was 3.7%.

Conclusion: First results showed that developed scoring system is highly sensitive and specific in detecting acute appendicitis. It could aid in selecting patients who require immediate surgery or those who require further evaluation. Proper prospective randomized trial evaluating the effect of such scoring system must be performed before recommending this scoring system for wide use.

Biography

Alexander Natroshvili has completed his PhD at I.M. Sechenov First Moscow State Medical University. He is an Assistant Professor at I.M. Sechenov First Moscow State Medical University, Head of Department at University Hospital. He has published more than 25 papers in reputed journals.

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