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Letter to the Editor

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Is a Training Program in Pediatric Abdominal Ultrasonography Necessary for Pediatricians?

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ABSTRACT

Despite being an essential specialty, pediatrics in South Korea faces the threat of collapse. While the declining birth rate is an important contributor to the decrease in the pediatric population, a more critical issue lies in the dysfunctional healthcare system. Primary care pediatricians are troubled by the lack of patients, whereas tertiary care specialists are concerned about the shortage of doctors. Although the absolute number of pediatric specialists is not small, there is a scarcity of doctors willing to specialize in pediatrics. Recently, pediatric abdominal ultrasonography has been conducted in tertiary hospitals. However, there is an argument that this responsibility should be shifted to primary care pediatricians. As someone who has been performing pediatric abdominal ultrasound examinations for years, I am committed to educating pediatric specialists in this field. My aim is to contribute, albeit modestly, to improving the South Korean healthcare system.

Keywords: Point of care ultrasound; Abdomen; Pediatrics; South Korea

INTRODUCTION

Medical doctors listen to patients concerning their symptoms, gather the necessary information through medical histories, and investigate through additional physical examinations. Subsequently, they proceed toward diagnosis through diagnostic tests, such as blood, urine, and stool tests, and imaging tests, such as radiography, computed tomography (CT), and magnetic resonance imaging. Ultrasonography, once considered inferior because of the technical limitations of the equipment compared with other diagnostic imaging tools, has recently gained prominence. Improved image quality, cost-effectiveness, and ease of accessibility owing to technological advancements are a few of the advantages of ultrasonography. Formerly confined to radiology, ultrasound examinations are now established as essential diagnostic methods across various clinical fields. Under the concept of POCUS (point of care ultrasound), this modality serves as a screening tool in almost every stage of physical examination [1,2]. Just as a clinician does not need to hire someone with better hearing to use a stethoscope, ultrasound equipment has become a second stethoscope for clinicians. As a characteristic of modern medicine, patient domains often overlap across various clinical specialties, and it is difficult to restrict certain procedures to specific

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departments. In South Korea, a new area was established to conduct abdominal ultrasound examinations for children under 8 years old in 2019 [3]. This was because of the ambiguous position between radiology and pediatrics and the clarification needed to determine whether POCUS was required for primary care pediatricians. Efforts are underway in South Korea to establish pediatricians as users of POCUS tools. My aim is to provide support for essential training processes and the integration and acceptance of POCUS in pediatric practice.

DISCUSSION

Pediatric abdominal ultrasonography is a screening tool that evaluates all organs within the abdominal cavity, including the genitourinary system, vascular structures, and other intra-abdominal conditions. This modality transforms anatomical structures invisible to the naked eye into visible images. Furthermore, the major advantage of ultrasonography over radiography or CT is its implementation of bedside and real-time imaging [2]. Through pediatric abdominal ultrasonography, the following are typically examined: hepatobiliary system, pancreas, spleen, intra-abdominal genitourinary system, intra-abdominal large vessels, intra-abdominal gastrointestinal system, intra-abdominal lymph nodes, fluid collection (ascites), and other intra-abdominal abnormalities. The reasons for examining these structures vary across different age groups of children. This highlights the applicability of POCUS. Unlike in adults, especially when examining the abdomen of newborns, the primary goal should be to screen for anomalies in major organs [4]. This can pose a major burden on practitioners. As a result, abdominal ultrasonography conducted in radiology departments in South Korea is currently segmented into several regions, including the liver, gallbladder, pancreas, kidneys, and urinary system, small and large intestines, appendix, and genitalia. The purpose of this strategy is to ensure efficiency and consider cost and time by examining only those areas. However, applying such practices to all age groups in clinical settings for children is inappropriate. The reason for the difference in pediatric abdominal ultrasonography is because of the considerably higher diagnostic rate of organ anomalies in infants than in adults [4,5]. Furthermore, there is ample support for creating a pediatric abdominal ultrasound examination code name for children under 8 years old, as there are many issues that can be missed if only a part of the abdomen is selected based solely on symptoms, similar to that in adults. This underscores the need to modify the standard guidelines for pediatric abdominal ultrasound examinations and tailor them to POCUS, which pediatricians and adolescent specialists can utilize.

Performing pediatric abdominal ultrasonography in primary healthcare institutions can improve the healthcare system in South Korea. Despite being an essential specialty in the country, pediatricians face unfavorable conditions, leading to a sharp decline in training opportunities to the extent that the healthcare system is unsustainable. The absolute number of pediatric specialists is not lacking. However, pediatricians in primary hospitals claim to have no patients, while those in tertiary hospitals claim to have no pediatric specialists. Screening tests should be adequately conducted in primary hospitals, and only patients requiring further intervention should be referred to tertiary hospitals. Performing abdominal ultrasonography by pediatric specialists in primary healthcare institutions increases the number of patients in primary healthcare facilities and reduces the number of patients referred to tertiary hospitals for the initial ultrasound examination. These concepts can serve as a foundation for improving the healthcare system in South Korea. Tertiary hospitals should focus on their original purpose of specialist training and treating severe and rare diseases.

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In South Korea, abdominal ultrasound training in pediatric residency curricula has not yet been established because guidance specialists do not actively use ultrasonography in clinical practice. Contrary to the explanation that ultrasonography is necessary in primary care for pediatric patients, a different situation arises in tertiary hospitals (training hospitals). This is because of the highly specialized and compartmentalized nature of clinical practice by guidance specialists in tertiary hospitals. Although ultrasonography may not be performed directly, specialists engage in considerable clinical work. Diseases diagnosed via pediatric abdominal ultrasound examinations are categorized into various departments and specialties within tertiary hospitals. Ultimately, guidance specialists consider only their POCUS skills, which are necessary for clinical practice. Pediatric gastroenterologists in tertiary hospitals often perform gastrointestinal endoscopies but frequently rely on the radiology department for abdominal ultrasound interpretations. As they do not perform abdominal ultrasonography directly, they do not intend to teach this skill to residents. Moreover, conditions requiring emergency diagnosis and treatment, such as intussusception, appendicitis, and gastrointestinal obstructive diseases, are often diagnosed in the emergency room, rendering POCUS suitable for pediatric emergency physicians. Although POCUS in the emergency room and pediatric gastroenterology and nephrology may differ, guidelines encompassing all areas are necessary to establish a standardized POCUS training process for primary care physicians. Who becomes the supervising physician is not crucial; the priority should be to develop a training system that adheres to guidelines, thereby eliminating residents' fears about post-specialization ultrasound examinations and instilling confidence and independence. Ultimately, laying the groundwork for training in pediatric residency programs will drive residents to begin performing abdominal ultrasound examinations.

Conclusion

Abdominal ultrasonography is essential in pediatric clinical practice. Pediatricians require tailored guidelines that align with their POCUS needs. With a sufficient understanding of ultrasound equipment, training, and practice in clinical settings, anyone can become an expert.

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