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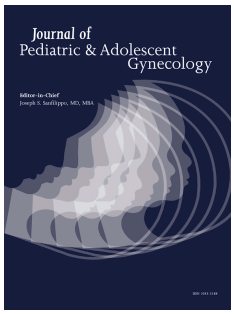

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The role of combined transperineal (TP) and transabdominal (TA) ultrasonography in detection of vaginal foreign bodies in girls: a retrospective study

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Abstract

Purpose. This study investigated the sonographic features of vaginal foreign bodies in girls and the diagnostic role of combined transperineal and transabdominal ultrasonography in the detection of vaginal foreign bodies in this population.

Methods. A retrospective review of the records of 249 girls seen in the outpatient pediatric and adolescent gynaecology clinic of our hospital and referred to our department for sonographic evaluation of suspected vaginal foreign bodies between 2013 and 2016 was performed. All patients were transperineally and transabdominally scanned using an ultrasound machine with 3-MHz and 7.5-MHz transducers. The sonographic features of the detected foreign bodies were recorded and reported. All patients also underwent pelvic radiography. The presence of foreign bodies was confirmed by vaginoscopy.

Results. Two hundred forty-nine cases were included in this study, and vaginal foreign bodies were detected in 181 patients. Vaginal foreign bodies often present in girls aged from 2-12 years old. The most common vaginal foreign bodies were toilet paper, beads, small parts of toys, cap of water color brush and crayons. The overall sensitivity and specificity of TP/TA sonography in the diagnosis of vaginal foreign bodies were 81% and 53%, respectively. The sensitivity and specificity of TA sonography were 33% and 49%, respectively. Abnormal findings were detected by x-ray in only 43 of the 181 cases (23.7%). The sensitivity and specificity of X-ray were 24% and 91%, respectively. The size of the foreign bodies ranged from 2 mm to 35 mm. For foreign bodies larger than 5 mm, the rate of sonographic accuracy reached 100%. For foreign bodies smaller than 5 mm, 32 false positive results, and 34 false negative results were identified. One hundred thirty-nine of 181 foreign bodies were less than 2 cm from the vaginal orifice (77%). All foreign bodies were hyperechoic compared to adjacent tissues. Some vaginal foreign bodies had characteristic echo patterns. With the exception of one patient with a detained AAA battery that caused viginal ulceration,the other patients got full recovery.

Conclusion. Vaginal foreign bodies were hyperechoic compared to adjacent tissues and often had characteristic echo patterns. The use of combined transperineal and transabdominal ultrasonography may be helpful in diagnosing foreign bodies, especially when the size of the foreign bodies is larger than 5 mm. Therefore, ultrasonography may be preferred for the initial