



Short Oral Presentation (OP24.04)

Value of “Elasto Strain Ratio“ ultrasound elastography in the diagnosis of intramural uterine fibroids - preliminary study.

Piotr Szkodziak, Sławomir Woźniak, Piotr Czuczwar, Wojciech Wrona, Kamila Trzeciak, Tomasz Paszkowski
3rd Chair and Department of Gynecology, Medical University of Lublin, Lublin, Poland.

Objectives: Elastography is an ultrasound-based imaging technique visualizing the stiffness of the examined region. This technique enables to match the elasticity of organs with a range of colours and depicts the strain ratios on a colour map. Elastography has found its use mainly in imaging of various tumors, where it provides important information on the tumor size, location, infiltration and optimal biopsy region. Intramural fibroids may modify the stiffness of the myometrium, which can be detected by ultrasound elastography and allows to differentiate with other tumors of myometrium. The aim of the study was to assess the accuracy of ultrasound elastography in the diagnosis of intramural fibroids.

Methods: We performed transvaginal ultrasound examinations in 45 women aged 26 - 47 years. 23 women who presented without any uterine pathology in ultrasonography were included in a control group and 22 women suspected of having intramural fibroids were included in study group. Diagnosis of intramural fibroids was set in the presence of solid masses with a whorled appearance, echogenicity similar to the myometrium or hypoechoic and/or metrorrhagia/menorrhagia. Finally the elastography option was activated. Elastographic evaluation of the myometrium was performed using Alpinion E-CUBE 15 EX/PLATINUM equipped with “Elasto Strain Ratio” software. The stiffness of intramural fibroids was compared to the stiffness of normal myometrium and “Elasto Strain Ratio” was calculated.

Results: Median of „Elasto Strain Ratio“ of myometrium in group of healthy women was calculated as 0.96 (range 0.81 – 0.99). In group of women suffering from intramural fibroids median of “Elasto Strain Ratio” of tumors was 1.495 (range 1.22 – 1.75). The results are significant at $p < 0.05$ (Mann-Whitney U Test). Median fibroids diameter was 45.5 mm (range 28 – 56 mm).

Conclusions: The results of the study indicate increased stiffness of intramural uterine fibroids relative to healthy myometrium. This study showed that, the use of elastography in addition to conventional ultrasound could help to diagnose uterine fibroids and differentiate with other uterine tumors.

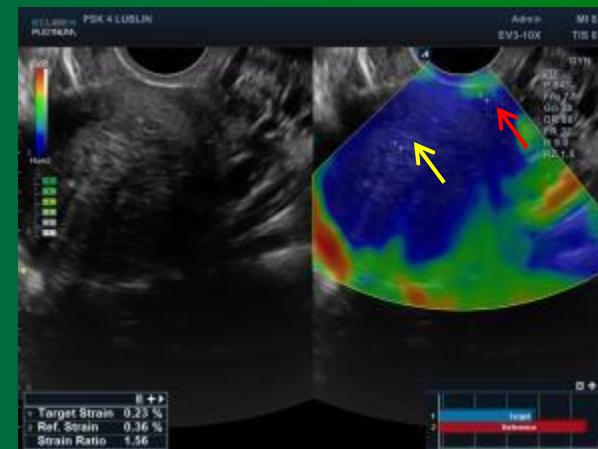


Fig. 1. Elasto Strain Ratio (1,56) – the stiffness of intramural fibroids (yellow arrow) was compared to the stiffness of normal myometrium (red arrow).