

Press release

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Basic information

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Department of: Clinical Medicine

Main supervisor: Margit Dueholm

Title of dissertation: Advanced Imaging and Clinical Symptoms in Adenomyosis

Date for defence: 30/11-2018 at (time of day): 14.00 Place: Auditorium B, Aarhus University Hospital, Palle Juul-Jensens Boulevard 99, Aarhus N

Press release (Danish)

Avanceret billeddiagnostik og kliniske symptomer ved adenomyose

Adenomyose er en godartet livmodersygdom karakteriseret ved forekomsten af livmoderslimhinde i livmodervæggen. Sygdommen er hyppigt forekommende blandt kvinder i den reproduktive alder og associeret med blødningsforstyrrelser, menstruationssmerter og ufrivillig barnløshed. Mindst tre undertyper af adenomyose er beskrevet, og denne afhandling fokuserer på adenomyose i den indre del af livmodervæggen (indre adenomyose). Traditionel diagnostik af adenomyose går på en subjektiv mønstergenkendelse med 2D ultralyd, men formålet med denne afhandling var at undersøge om 3D ultralyd gennem skeden kunne forbedre diagnostikken af indre adenomyose ved at visualisere og måle den indre del af livmodervæggen, også kaldet junctional zone (JZ). Vi har sammenlignet den diagnostiske nøjagtighed samt interobserver variationen ved 3D ultralyd med 2D ultralyd og fundet den mest nøjagtige kombination af enkelte ultralydskriterier til en mere objektiv diagnostik fremover. Derudover har vi undersøgt behandlingseffekten af transcervical endometriresektion.

Blandt raske, fødedygtige kvinder var JZ både tynd (< 8 mm) og ensartet. De mest optimale grænseværdier for JZ målinger til diagnostik af indre adenomyose var en median tykkelse på > 10.5 mm og en median uregelmæssighed på ≥ 5 mm. En kombination af 2D og 3D ultralyd gav den mest nøjagtige diagnose ved tilstedeværelse af mindst to 2D kriterier og mindst to 3D kriterier (75% sensitivitet og 79% specificitet). De fleste patienter med en falsk-positiv diagnose af indre adenomyose havde en savtakket JZ ved den patologiske undersøgelse. En savtakket JZ tilsvarede 3D målinger af en let fortykket (8 – 12 mm) og irregulær (3 – 6 mm) JZ.

Dette er blandt hovedresultaterne i et nyt ph.d.-projekt fra Aarhus Universitet, Health, som kan bidrage med ny viden indenfor klinisk diagnostik og håndtering af indre adenomyose. Projektet er gennemført af læge og ph.d.-studerende Christina Kjærgaard Rasmussen.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 30/11-2018 kl. 14.00 i Auditorium B, Aarhus Universitetshospital, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N. Titlen på projektet er "Advanced Imaging and Clinical Symptoms in Adenomyosis". Yderligere oplysninger: Ph.d.-studerende Christina Kjærgaard Rasmussen, e-mail: christinakr@clin.au.dk.

Bedømmelsesudvalg:

Overlæge, Associate Professor Isil Pinar Bor (chairman og moderator for forsvaret)
Kvindesygdomme og fødsler, Randers Regionshospital, Danmark.

Professor Juan Luis Alcázar Zambrano
Clínica Universidad de Navarra Obstetrics and Gynecology, Spanien.

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Obstetrisk og Gynækologisk afdeling, Herlev Hospital, København, Danmark.

Press release (English)

Advanced Imaging and Clinical Symptoms in Adenomyosis

Adenomyosis is a benign uterine disorder characterized by the presence of ectopic endometrium within the myometrium. It is common among women of reproductive age and is associated with abnormal uterine bleeding, pelvic pain and infertility. At least three subtypes of adenomyosis have been described and this dissertation focuses on internal type (adenomyosis of the inner myometrium). Traditional diagnosis of adenomyosis rely on subjective pattern recognition with 2D transvaginal ultrasonography (TVS), however the aim of this dissertation was to examine the potential role of 3D-TVUS for the diagnosis of adenomyosis of the inner myometrium focusing on visualization and measurements of the inner myometrium, also known as the junctional zone (JZ). We compared the diagnostic accuracy and interrater agreement obtained with off-line 3D-TVUS to accuracy and agreement with real-time 2D-TVUS and found the most accurate combination of individual ultrasonographic criteria for a more objective diagnosis in the future. In addition, we evaluated the clinical outcome of transcervical resection of the endometrium.

In healthy, fertile women, the JZ was both thin (< 8 mm) and regular. The most optimal cut-off values for JZ measurements for diagnosis of adenomyosis of the inner myometrium were thickness of > 10.5 mm and irregularity of ≥ 5 mm. The presence of at least two 2D criteria and two 3D criteria resulted in sensitivity of 75 % and specificity of 79 %. Patients with a false-positive diagnosis of adenomyosis of the inner myometrium often had deep endometrial penetration (serrated JZ) at histopathology. A serrated JZ corresponded to 3D measurements of a slightly thickened (8 – 12 mm) and or irregular (3 – 6 mm) JZ. These are among the main findings in a new PhD project from Aarhus University, Health, which may inform clinicians how to diagnose and manage adenomyosis of the inner myometrium in the future. This project was carried out by MD and PhD student Christina Kjærgaard Rasmussen, who is defending her dissertation on 30/11 2018.

The defence is public and takes place at Auditorium B in Aarhus University Hospital, Palle Juul-Jensens Boulevard 99, 8200 Aarhus N. The title of the project is Advanced Imaging and Clinical Symptoms in Adenomyosis. For more information, please contact PhD student Christina Kjærgaard Rasmussen, email: christinagr@clin.au.dk.

Assessment committee:

Consultant, Associate Professor Isil Pinar Bor (chairman and moderator of the defence)
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