

Interdepartmental Quality Improvement Project Assessing Sonographic Incidence of Adenomyosis

Implications in a UK tertiary care centre

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Audit Background and Objectives

✓ Background:

- Adenomyosis is a recognised cause of pelvic pain, menorrhagia and dysmenorrhea. Taylor et al. highlights the psychosocial impact of this diagnosis beyond physical health¹.
- Both public and clinician awareness of this disease have increased in recent years, leading to diagnostic shifts.
- Robust imaging pathways are therefore essential to reduce diagnostic delays and better identify clinically significant disease.

✓ Objectives:

- To quantify sonographic incidence of adenomyosis features over a 12-month period (February 2024 to 2025) in NHS Tayside.
- To inform discussion at a local joint gynaecology radiological clinical effectiveness meeting in order to improve areas for improvement in patient care.

Methods

Retrospective search of all transvaginal ultrasounds (TVUS) over one year on Radiology Interface System (RIS).

Report analysis inclusion criteria:

US studies with keyword “adenomyosis” in the clinical request and/or report text.

Exclusion criteria:

Pre-existing diagnosis of adenomyosis (documented in the clinical history of imaging request or previous imaging reports).
Non-diagnostic and incomplete scans.
Repeated US in past year.

N=6204

Total TVUS

N = 862

TVUS meeting
inclusion criteria

N = 677

TVUS reports after
exclusion criteria

Findings

677 relevant TVUS reports were reviewed.

577 scans suggested a diagnosis of adenomyosis.

Two-thirds (66.2%, n = 382) of positive reports cited 2 to 3 sonographic features, detailed below.

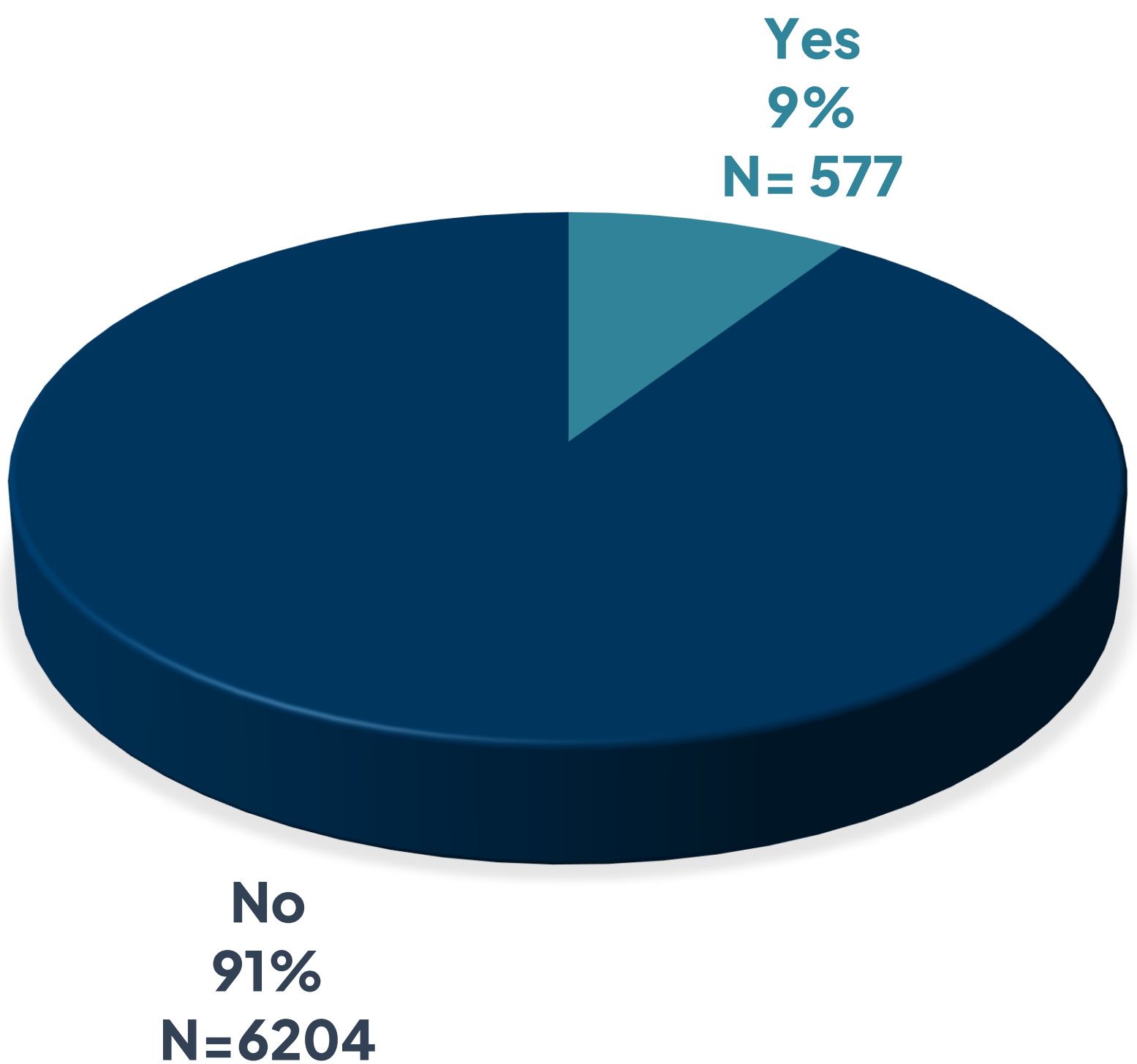
Only 16.8% (n = 97) relied on a single descriptor, whereas 83.0% (n = 479) cited 2 or more features.

Majority of patients were referred from primary care (80.2%, n=543/677 vs 19.8% from secondary care).

79.0% of all reviewed US requests did not include a specific clinical question of adenomyosis (n=538/677), suggesting high operator vigilance during TVUS.

MRI was performed in 20 out of 677 (3.0%) patients. This confirmed adenomyosis in 12 out of 16 patients and excluded adenomyosis in 3 out of 4 patients.

Adenomyosis features described in overall patient cohort undergoing TVUS?



Morphological Uterus Sonographic Assessment (MUSA)² consensus was first published in 2015 with the aim to refine diagnostic criteria and standardise ultrasound reporting for adenomyosis.

Direct MUSA features identified

Myometrial Cysts

62.0% n=220

Hyperechoic Islands

48.0% n=118

Indirect features Identified

Heterogeneous myometrium

87.5% n=505

Fan-shaped shadowing (Parallel shadowing/linear striations)

32.4% n=187

Globular uterus

30.5% n=176

Indistinct endometrial-myometrial junction

26.3% n=152

Discussion and limitations

Although not directly comparable, results suggest relative alignment with estimated disease burden provided by NICE guidelines (2018, 2021)³ in a symptomatic population at 20–35%.

Clinical notes were not reviewed due to the scope of project, high case volume and resource limitations. There was also no specific review of the number or type of presenting symptom(s) on the imaging requests.

Unclear how many patients subsequently received further gynaecological review or a final clinical diagnosis of adenomyosis. However, we noted a high TVUS sensitivity and specificity on patients followed up with MRI.

Common usage of legacy terms like “heterogeneous myometrium” reflect myometrial changes now better defined by MUSA terminology (eg. hyperechoic islands). Local reporting practice is expected to gradually evolve towards these standardised descriptors.

Positive project outcomes and next steps

High TVUS sensitivity and specificity:

Provided robust diagnostic certainty, eliminating the need for routine confirmatory pelvic MRI in the absence of additional clinical indications.

High reporting standards:

Feedback to sonographers and radiologists at our meeting reinforced standardised usage of MUSA terminology, therefore minimising variations in care and improving diagnostic pathways in line with national priorities.

Second phase retrospective analysis of this patient cohort:

Ongoing work with the gynaecology team to ascertain the proportion of patients reviewed clinically following imaging and if a final clinical or pathological diagnosis was made.

Optimisation of primary–secondary care diagnostic pathways:

Clinically mild or incidentally detected adenomyosis may be managed conservatively without requiring secondary care referral. Our ongoing data collection on clinical symptoms and management would help risk stratify patients who would benefit from early gynaecology referral. These insights will be fed back to primary care to enhance GP engagement and explore the use of a standardised patient symptom questionnaire.

References:

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- Harmsen MJ, Van den Bosch T, de Leeuw RA, et al. Consensus on revised definitions of Morphological Uterus Sonographic Assessment (MUSA) features of adenomyosis: results of modified Delphi procedure. *Ultrasound Obstet Gynecol*. 2022;60(1):118–131. doi:10.1002/uog.24786
- National Institute for Health and Care Excellence (NICE). 2018. *Heavy menstrual bleeding: assessment and management* (NICE Guideline NG88). Last updated May 2021. Available at: nice.org.uk