

ENDOANAL ULTRASOUND IMMEDIATELY POST-PARTUM: RESULTS AND CORRELATIONS WITH CONTINENCE AT SIX WEEKS POST PARTUM

Hypothesis / aims of study

Faecal incontinence following childbirth is both distressing and disabling. Sphincter defects have been demonstrated in up to 35% of primiparous women at six weeks post partum (1). However, at this stage, the opportunity to influence the primary repair has been lost. It has previously been shown that endoanal ultrasonography immediately post partum is both feasible and tolerable (2). The aims of this study were to determine the percentage of women with second-degree tears and episiotomies who have an anal sphincter defect on endoanal ultrasound immediately post-partum and to determine if these images correlate to symptoms of anal incontinence at six weeks post-partum.

Study design, materials and methods

Primiparous women delivering at a tertiary referral centre who had a second degree tear or an episiotomy were approached to participate in the study after two independent assessors had excluded clinical anal sphincter damage. Those that gave informed consent were offered immediate post-partum endoanal ultrasonography. Women were scanned using a B&K scanner with a 10MHz rotating anorectal probe and standard sonolucent hard cone. The probe was introduced into the rectum and slowly withdrawn. The puborectalis, internal anal sphincter, external anal sphincter and submucosa were observed. The real time ultrasound scans were recorded on SVHS and reviewed blindly. Women under eighteen years old or who did not speak sufficient English to understand the test themselves when an independent interpreter was not available were excluded from the study. Women with a history of previous anal surgery or inflammatory bowel disease or diabetes were also excluded as these conditions may affect anal continence. Women participating in the study were invited to complete a validated faecal incontinence symptom score to assess for symptoms of solid and liquid faecal incontinence, impairment of control of flatus and faecal urgency from six weeks post-partum.

Results

349 women were approached to take part in the study. 220 (63%) agreed to participate and had endoanal ultrasound performed. There were technical problems with 22 (10%) scans due to equipment failure and these were not reviewed. Of the 198 scans reviewed, 118 (60%) had both an intact internal and external anal sphincter. 59 (30%) scans had an external anal sphincter defect only and there were no scans with only an internal anal sphincter defect. Six (3%) scans had both internal and external anal sphincter defects. Fifteen (7.5%) scans were uninterpretable.

Table 1: Results of incontinence scores by scan result:

Endoanal ultrasound findings:	Total number	Number with incontinence (%)
Intact anal sphincters	62	7 (11.3)
Isolated EAS defect	28	2 (7.1)
IAS and EAS defect	4	1 (25)
Uninterpretable scan	6	2 (33)

The prevalence of anal incontinence in the cohort was twelve percent. Ten percent of women had a 'severely abnormal' ultrasound scan with either both the IAS and EAS disrupted or such profound distortion of the anal sphincter that the anatomy was not interpretable. In this group the prevalence of incontinence was thirty percent. A severely abnormal endoanal ultrasound scan immediately post-partum increases the risk of anal incontinence three times when compared to woman with a normal ultrasound or an isolated EAS defect.

Interpretation of results

Endoanal ultrasound is a cheap, minimally invasive test, which is easy to perform and appears to be acceptable to the majority of women immediately post-partum. Each woman participating in this study had their perineal injury confirmed as not involving the anal sphincter by two independent assessors. Damage to the internal and external anal sphincters can be seen on the ultrasound images, confirming the concept of occult anal sphincter damage. This is extremely important medico-legally where damage to the anal sphincter may not have been missed by obstetricians but may be genuinely occult. Where the prevalence of anal incontinence is low, such as this cohort of women, endoanal ultrasound is reassuring when the test is negative and confirms the clinical findings. If the prevalence of anal incontinence was increased, then the sensitivity and specificity of endoanal ultrasound would increase. This information has the potential to be used to target post-natal follow-up to women at increased risk of anal incontinence. The appearance of the anal sphincter complex immediately post partum needs to be characterised by experts in the field before endoanal ultrasound could be used widely in this context.

Concluding message

Endoanal ultrasound immediately post-partum can identify women at three times the risk of anal incontinence post-natally than those with intact anal sphincters or an isolated external anal sphincter defect.

References

1. Anal sphincter disruption during normal vaginal delivery N Eng J Med 1993; 329:1905-1911
2. Detecting Anal Sphincter Injury: Acceptability and feasibility of endoanal ultrasound immediately post partum. Ultrasound in Obstetrics & Gynaecology 2003 Aug;22(2):215-7

FUNDING: Royal College of Surgeons and Research and Development, Birmingham Women's Hospital