

DIGITATION ASSOCIATED WITH DEFECACTION: WHAT DOES IT MEAN IN UROGYNECOLOGICAL PATIENTS?

Hypothesis / aims of study

Obstructed defecation, defined as difficulty in evacuation or emptying of the rectum, is estimated to affect 7% of the adult population [1]. Known causes of obstructed defecation include rectocele, rectal intussusception and rectal prolapse. Patients with pelvic organ prolapse causing obstructed defecation are often distressed by their symptoms and by the need for vaginal, perineal or rectal digitation to assist defecation. Various imaging techniques have been used to investigate such symptoms, eg defecation proctography, dynamic magnetic resonance Imaging (MRI) and Evacuation Scintigraphy. Due to cost and poor patient acceptance, they have not been widely used. Translabial ultrasound (US) is effective in assessing the posterior compartment for anatomical abnormalities, with the added benefit of reduced patient bother[2]. The aim of the present study was to explore the association between different forms of digitation (vaginal, perineal and anal) and abnormal posterior compartment anatomy in women seen in a tertiary urogynaecological clinic.

Study design, materials and methods

This is a retrospective study utilizing data of 292 women seen consecutively at a tertiary urogynaecological centre with a standardized interview, ICS POP-Q assessment and transperineal ultrasound (US) between 2/13 and 10/13. The bother of symptoms of obstructed defecation (OD; straining at stool, incomplete bowel emptying and digitation) was assessed with the help of a visual analogue scale (VAS) [3]. Of these patients, 19 were excluded due to missing ultrasound volumes, 2 due to missing data, leaving 271. U/S volume datasets were acquired supine and after voiding, using a Voluson 730 expert system with RAB 8-4 MHz transducer as described previously[2] to evaluate pelvic organ descent. The resulting datasets were investigated with the help of post-processing software 4D View v 10.0. Post-processing analysis of ultrasound volumes was performed blinded against all clinical data.

A horizontal reference line through the inferior-posterior margin of the pubic symphysis was used to measure descent of pelvic organs as previously described [2]. A true rectocele, i.e. a defect of the rectovaginal septum (RVS) was diagnosed if the depth of the rectal diverticulum measured ≥ 10 mm [2]. An intussusception was diagnosed if there was splaying of the anal canal and inversion of the anterior wall of the rectal ampulla into the anal canal, without there being an overt rectal prolapse [2]. Statistical analysis was carried out with SPSS v12 and Minitab v 10, using t- tests and Fisher's exact test. We did not perform power calculations due to the absence of pilot data.

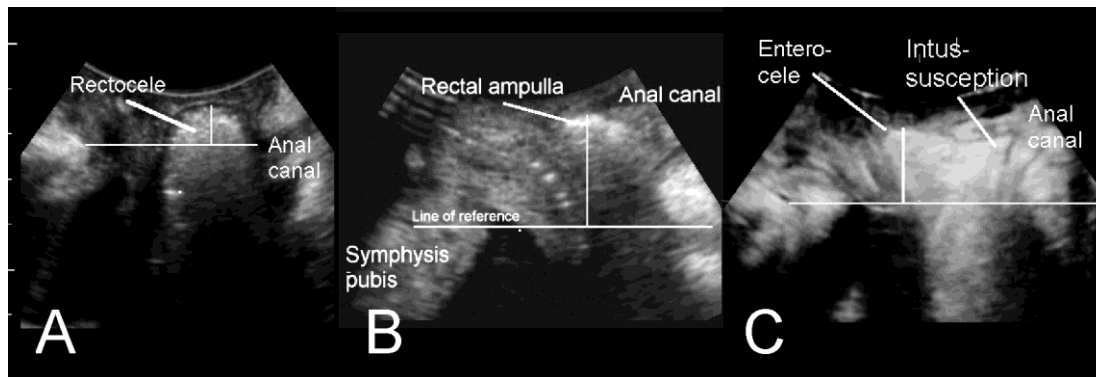


Figure: Anatomical abnormalities of the posterior vaginal compartment associated with symptoms of obstructed defecation, showing a “true rectocele”, i.e., a defect of the recto-vaginal septum (A), descent of the rectal ampulla without rectocele (‘perineal hypermobility’, B) and rectal intussusception (C).

Results

271 patients were analysed with a mean age of 57 (21-89) and a mean BMI of 29 (\pm 6.0). Ninety-one percent (n=247) of patients were vaginally parous, 55% (n=149) reported symptoms of prolapse. Sixty-three percent (n=172) of patients suffered from obstructed defecation, with 37% (n=99) straining at stool, 48% (n=131) complaining of incomplete bowel emptying and 39% (75) of digitation. Perineal digitation was reported by 58, vaginal digitation by 34 (13%), and anal digitation by 16 women. The median bother of OD symptoms was 1.4 (range, 0-10).

Significant prolapse on ICS POPQ exam was detected in 77% (n=210) of women (56% (n=151) in the anterior compartment, 15% (n=29) in the central compartment and 57% (n=155) in the posterior compartment. On ultrasound imaging, 42% of patients (n=114) had a true radiological rectocele, i.e. defects of the rectal-vaginal septum, with a mean pocket depth of 16 (5-36) mm. The position of the rectal ampulla was 4 mm below the symphysis on average. In 26 (10%) we found an enterocele on imaging. Six women (2.2%) had a rectal intussusception (see Table 1).

| | Position of rectal ampulla (per mm) | True Rectocele (yes/no) | Rectocele depth (mm) | Enterocele (yes/no) | Intussusception (yes/no) |
|--|-------------------------------------|-------------------------|----------------------|---------------------|--------------------------|
|--|-------------------------------------|-------------------------|----------------------|---------------------|--------------------------|

| Forms of digitation | | | | | |
|------------------------|----------------------------|------------------------------|------------------------------|----------------------------|---------------------------|
| Perineal (n=58) | OR 0.97 (0.95-1.0) P= 0.02 | OR 1.87 (1.04-3.36) P= 0.038 | OR 1.04 (1.01-1.07) P= 0.023 | OR 1.73 (0.71-4.2) ns | OR 3.82 (0.75-19) ns |
| Vaginal (n= 34) | OR 0.97 (0.95-1.0) P=0.02 | OR 1.89 (0.92-3.9) P=0.085 | OR 1.04 (1.01-1.08) P=0.023 | OR 2.33 (0.86-6.3) P=0.096 | OR 3.64 (0.06-21) ns |
| Anal (n= 16) | OR 0.97 (0.93-1.0) P=0.053 | OR 3.11 (1.09-8.8) P=0.033 | OR 1.08 (1.02-1.13) P=0.005 | OR 1.38 (0.30-6.4) ns | - |
| Any (n=75) | OR 0.98 (0.96-1.0) P=0.013 | OR 1.85(1.81-1.02) P=0.032 | OR 1.04 (1.01-1.07) P=0.005 | OR 1.73 (0.69-4.3) P=0.02 | OR 6.47 (0.84-44) P=0.031 |

Table: The association between digitation on defecation and anatomical abnormality (n=271).

On univariate analysis, all three forms of digitation were associated with anatomical abnormalities of the posterior compartment (see Table 1). There was a significant association between the position of the rectal ampulla on Valsalva and perineal ($p=0.02$) and vaginal ($p=0.02$) digitation. There was also a significant association between true rectocele and perineal ($p=0.038$) and anal ($p=0.033$) digitation, and rectocele depth was associated with all three forms of digitations ($P= 0.023- 0.005$). This was not the case for enterocele and intussusception, but this may be due to a lack of power, given that 'any digitation' was associated with all of the above anatomical findings, including enterocele and intussusception. In fact, the highest odds ratio was found for the association between intussusception and any digitation (OR 6.47). The bother of symptoms of obstructed defecation was strongly associated with digitation (all $P \leq 0.001$), with no appreciable difference in bother between the three forms.

Interpretation of results

In this study on a cohort of 271 consecutive urogynecological patients, 28% (75) of women reported anal, vaginal or perineal digitation, with the latter the most common and anal digitation the least prevalent. All forms of digitation were similarly bothersome, and all were similarly associated with anatomical abnormalities of the posterior vaginal compartment. No single form of digitation seems to be more predictive of such abnormalities than others.

Concluding message

Digitation is a common symptom in patients with anatomical abnormalities of the posterior compartment of the pelvic floor. None of the three forms of digitation was more bothersome or more predictive of anatomical abnormalities than the other two, suggesting that it may not be necessary to distinguish between forms of digitation in clinical practice.

References

1. Colorectal Disease 2003; 5(4): 280–287
2. Tech Coloproctol DOI 10.1007/s10151-013-1117-5
3. Ultrasound Obstet Gynecol 2013; DOI: 10.1002/uog.13222

Disclosures

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