

Can the method of digitation predict pathology in anorectal dysfunction patients?

The case of the Scooper, Splinter, Stretcher and Reducer – Preliminary Data

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Purpose

- Many patients with anorectal dysfunction perform anal and vaginal digitation to help them effectively open their bowels.
- Previous work by another group found a link with digitation and rectoceles, but no differentiation between vaginal and anal digitation [1].
- We aimed to subdivide patients who digitate into four categories depending on their method of digitation – Scoopers, Splinters, Stretchers and Reducers
- We hypothesised that different forms of digitation would be associated with different pathologies. We hypothesised that Scoopers would be more likely to have internal anal sphincter defects and reduced anal canal resting pressure; Splinters would have more rectoceles; Stretchers would be more likely to be anismic; and Reducers would have higher degrees of intussusception.
- If correct, asking specific questions relating to form of digitation on taking a history could predict pathology.

Definitions

- **SCOOPER** – Someone who digitates PR to finish or end a bowel movement, and thus “scoop” the stool out
- **SPLINTER** – Someone who digitates PV to aid defaecation
- **STRETCHER** – Someone who digitates PR to open up their anus to allow defaecation
- **REDUCER** – Someone who digitates PR to push something out of the way to allow defaecation

Method

- Patients were asked about their digitation, as per routine practice, either prior to having investigations (prospective) or after when attending for treatment (retrospective).
- Data was obtained from anorectal manometry, endoanal ultrasound, integrated total pelvic floor ultrasound and defaecation proctography assessment. Analysis was performed blind to knowledge of digitation method.
- Each group of digitators was compared against a group of non-digitating patients and against a combined group of all other digitators.

Investigations

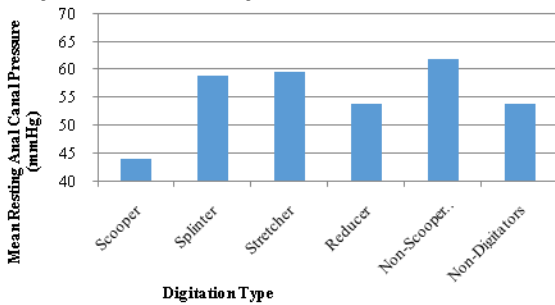
- Anorectal manometry – performed using either Ardmore Healthcare water perfused system or Solar HRM system. Criteria assessed were anal canal resting pressure, incremental squeeze pressure, and threshold, urge and maximum tolerated volume on balloon inflation.
- Endoanal ultrasound – performed using BK 2050 and 8838 3D anal ultrasound probes. Criteria assessed were the presence and location of external and internal anal sphincter defects.
- Integrated total pelvic floor ultrasound – performed using BK 8838 3D ultrasound probe and 8802 transducer. Criteria assessed were rectoceles, intussusceptions, enteroceles, poor propulsive effort on push and anismus.
- Defaecation proctography – performed using 120-180 rectal contrast porridge and barium drink. Criteria assessed were rectoceles, intussusceptions, enteroceles, poor propulsive effort on push and anismus.

Results

- In this preliminary data series, 100 patients (mean age 52, range 19-86; male 7: female 93) who presented for investigations within a tertiary pelvic floor unit with anorectal dysfunction between 2013-16 were included.
- 24 were classed as Scoopers; 25 were classed as Splinters; 18 were classed as Stretchers; 13 were classed as Reducers; and 38 did not digitate. There was some overlap where some patients performed more than one type of digitation.
- 99 patients underwent anorectal manometry and endoanal ultrasound; 90 underwent integrated total pelvic floor ultrasound and 85 underwent defaecation proctography.

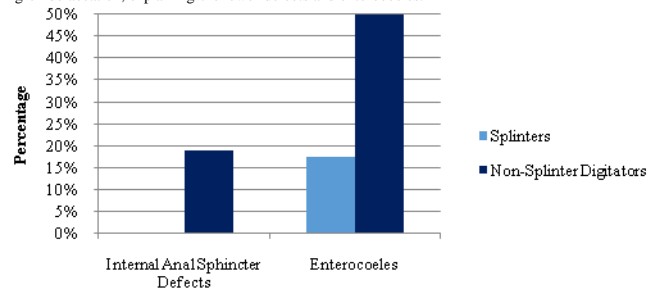
Scoopers

- Scoopers had a statistically significant reduced resting pressure compared to other digitators ($p = 0.0235$).
- However they did not have a significantly higher proportion of internal anal sphincter defects when compared to non-digitators ($p = 0.4896$) or to the other digitators ($p = 0.4093$).
- This may indicate that these patients have a poor defaecatory technique and digitation has caused a reduction in sphincter tone in the absence of sphincter defect.



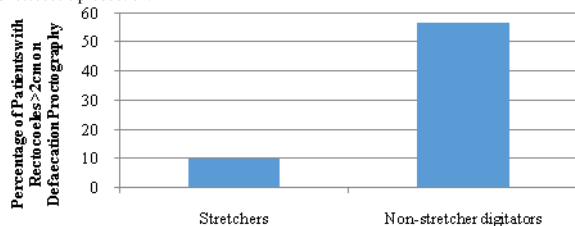
Splinters

- Splinters has statistically significant fewer internal anal sphincter defects than other digitators ($p = 0.0358$) and statistically significant fewer enteroceles on integrated total pelvic floor ultrasound than other digitators ($p = 0.0208$).
- However, they did not have a significantly higher number of rectoceles when compared to non-digitators or other digitators on both ultrasound and proctography.
- This may indicate that digitating PV rather than PR prevents causing trauma to the anal canal and straining on defaecation, explaining the fewer defects and enteroceles.



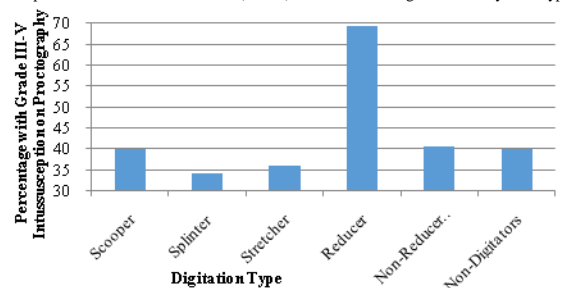
Stretchers

- Stretchers had statistically significant smaller rectoceles on defaecation proctography compared to other digitators ($p = 0.0121$).
- However, they were not more likely to be anismic when compared to either the non-digitators or other digitators on both ultrasound and defaecation proctography.
- This may indicate that by manually opening the anus, stretchers reduce the force on straining and thus reduced rectocele production.



Reducers

- Reducers had a greater proportion of patients with higher grades of intussusception on defaecation proctography when compared to both non-digitators and other digitators, although not statistically significant.
- The sample size for Reducers was small ($n = 13$) and this lack of significance may be a Type 2 Error.



Conclusion

- From this preliminary data, the different groups of digitators were unable to be distinguished from non-digitators by pathology on investigations – this may be because the non-digitators were patients themselves with anorectal disorders rather than normal asymptomatic individuals.
- Differences can be seen between the digitators when comparing amongst themselves although at this stage pathology cannot be predicted on purely taking a history.
- Data may be limited as some patients present with more than one digitation type, creating over-lap between the compared groups and males and females were assessed together. These will be separated in the final analysis with a larger cohort.

References

- 1 - Hai-Ying, C., Guzmán Rojas, R., Hall, J. C., Atan, I. K., Dietz, H. P. 2016 “Digitation associated with defecation: what does it mean in urogynaecological patients?” Int Urogynecol J 27(2): 229-32.