

Does a second forceps increase the risk of pelvic floor dysfunction?

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Introduction

Forceps delivery is a strong risk factor for female pelvic organ prolapse,[1] mediated by overdistension and trauma to the levator ani muscle.[2] Forceps is also a risk factor for urinary incontinence.

Aims

While Forceps is a major risk factor for several forms of pelvic floor dysfunction, it remains unclear whether a subsequent (second) Forceps conveys additional risk.

Methods

This study was a retrospective analysis of data obtained in a tertiary urogynaecological centre between 12/2017 and 12/2024. The obstetric history included delivery modes of all births, birth weight of the firstborn, and age at first birth. A clinical POPQ examination and 4D translabial ultrasound were undertaken for objective prolapse assessment and imaging of the levator ani muscle and hiatus. All clinical data was extracted from the institutional database. Forceps births were categorized as none, one, or more than one. Associations between Forceps delivery category (one or more than one) on the one hand and symptoms of prolapse and their bother as well as objective prolapse, hiatal overdistension and levator avulsion on 4D ultrasound imaging were examined using Minitab v 13.1.

Results

In total 2048 women were seen during the study period. Forceps births were reported by 401 (19.6%), with 323 reporting one, 58 reporting two, 17 reporting 3, two reporting 4 and one reporting six Forceps deliveries. The following analysis pertains to the 401 women who reported at least one Forceps. On clinical examination, 82% (n=329) had evidence of significant prolapse (stage 2 in anterior or posterior and/ or stage 1 in the central compartment). On imaging, mean hiatal area was 28.7 (SD 9.5) cm², and a levator avulsion was diagnosed in 29.7% (n=119), of which 10.7% (n=43) were bilateral. When women with one Forceps were compared to those with more than one Forceps delivery, we found that the latter group showed less symptoms of prolapse and objective prolapse, especially in the anterior compartment, and less levator trauma.

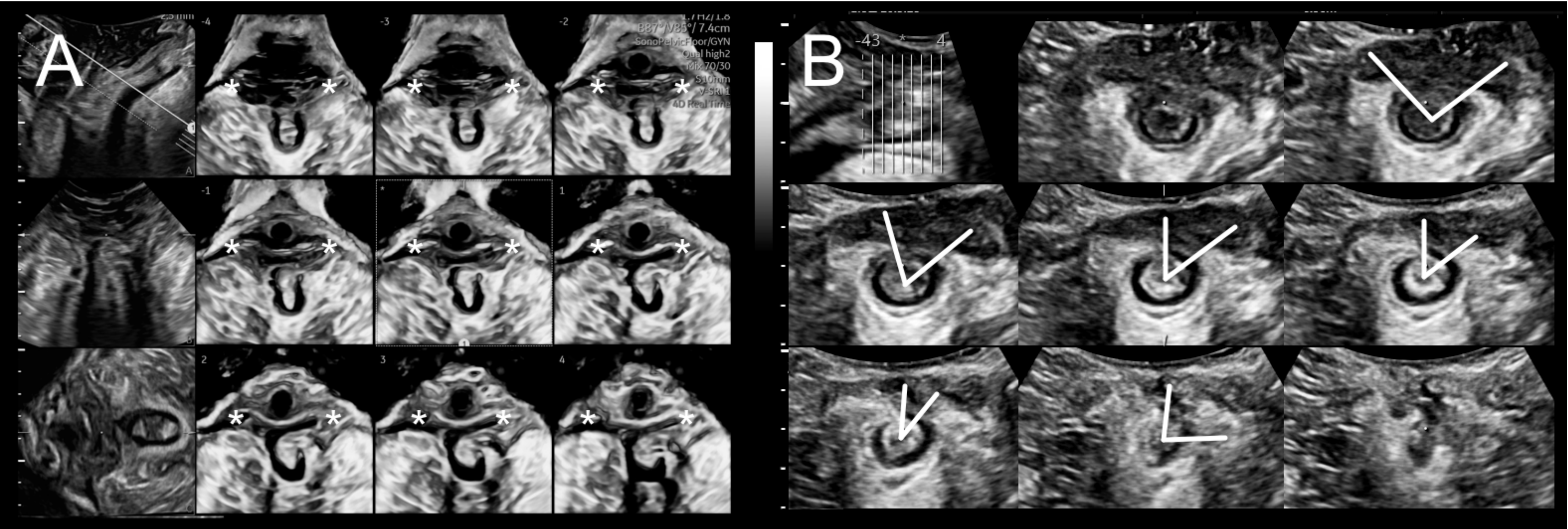


Figure: Bilateral levator avulsion (A) and 3C anal sphincter tear (B) after Forceps delivery. Defects are indicated by (*) and angles.

	One FD (n=323)	Two or more FD (n=78)	P
Stress Incontinence (yes/no)	246/323 (76%)	61/78 (78%)	n.s.
Urge Incontinence (yes/no)	241/323 (75%)	59/78 (76%)	n.s.
Anal Incontinence (yes/no)	104/323 (32%)	24/77 (31%)	n.s.
Prolapse symptoms (yes/no)	197/323 (61%)	35/78 (44%)	0.012
Prolapse bother (VAS)	3.94 (SD 4.01)	3.00 (SD 4.08)	0.07
Ba (cm from hymen)	-0.52 (SD 1.71)	-0.95 (SD 1.74)	0.055
C (cm from hymen)	-4.42 (SD 3.39)	-5.2 (SD 3.89)	0.108
Bp (cm from hymen)	-1.03 (SD 1.57)	-1.17 (SD 1.4)	n.s.
Gh+Pb (cm)	7.77 (SD 1.46)	7.37 (SD 1.56)	0.041
Sign. prolapse on examination (yes/no)	270/323 (84%)	59/78 (76%)	n.s.
Cystocele descent (mm below SP)*	-7.3 (SD 18.3)	-2.9 (SD 17.4)	0.048
Uterine descent (mm below SP)*^	-2.7 (SD 20.6)	-0.9 (SD 19.2)	n.s.
Rectal ampulla descent (mm below SP)*	-8.7 (SD 15.3)	-7.4 (SD 18.2)	n.s.
Hiatal area on Valsalva (cm2)	29.01 (SD 9.19)	27.3 (SD 10.5)	n.s.
Levator avulsion (yes/no)	106/323 (33%)	13/78 (17%)	0.002

Table 1: Symptoms and signs of pelvic floor dysfunction in women after one and 2+ Forceps.
*Measurements signify higher (that is, less abnormal) organ position for 2+ FD on both clinical and US exam. ^when uterus visible

Conclusions

We were unable to demonstrate an increased risk of pelvic floor dysfunction after one or more additional Forceps after the first. This counterintuitive result may be explained by the effect of traumatic childbirth on reproductive performance.

References
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