

RETROVERTED UTERUS AND PELVIC FLOOR DYSFUNCTION: 400 B.C. – 2025 A.D.



Bernard T Haylen¹, Dzung Vu²

¹: University of New South Wales, Sydney. Australia

²: University of Notre Dame, Sydney. Australia



Objective

To elucidate whether the retroverted (R/V) uterus has an impact on pelvic floor dysfunction (PFD) via a historical analysis of the literature.

Background

The retroverted uterus is an anatomical variant¹ whereby the cervix is pointing downwards and forwards and the axis of the body of the uterus is directed backwards, towards the hollow of the sacrum and away from its “normal” anteverted position overlying the sacrum. If angulation of the body (corpus) of the uterus on the cervix, at the level of the isthmus, is more pronounced, the retroverted uterus should additionally be termed “retroflexed” (Figure 1). There has been no study, dating back indefinitely, to assess the impact this entity might have on pelvic floor dysfunction.

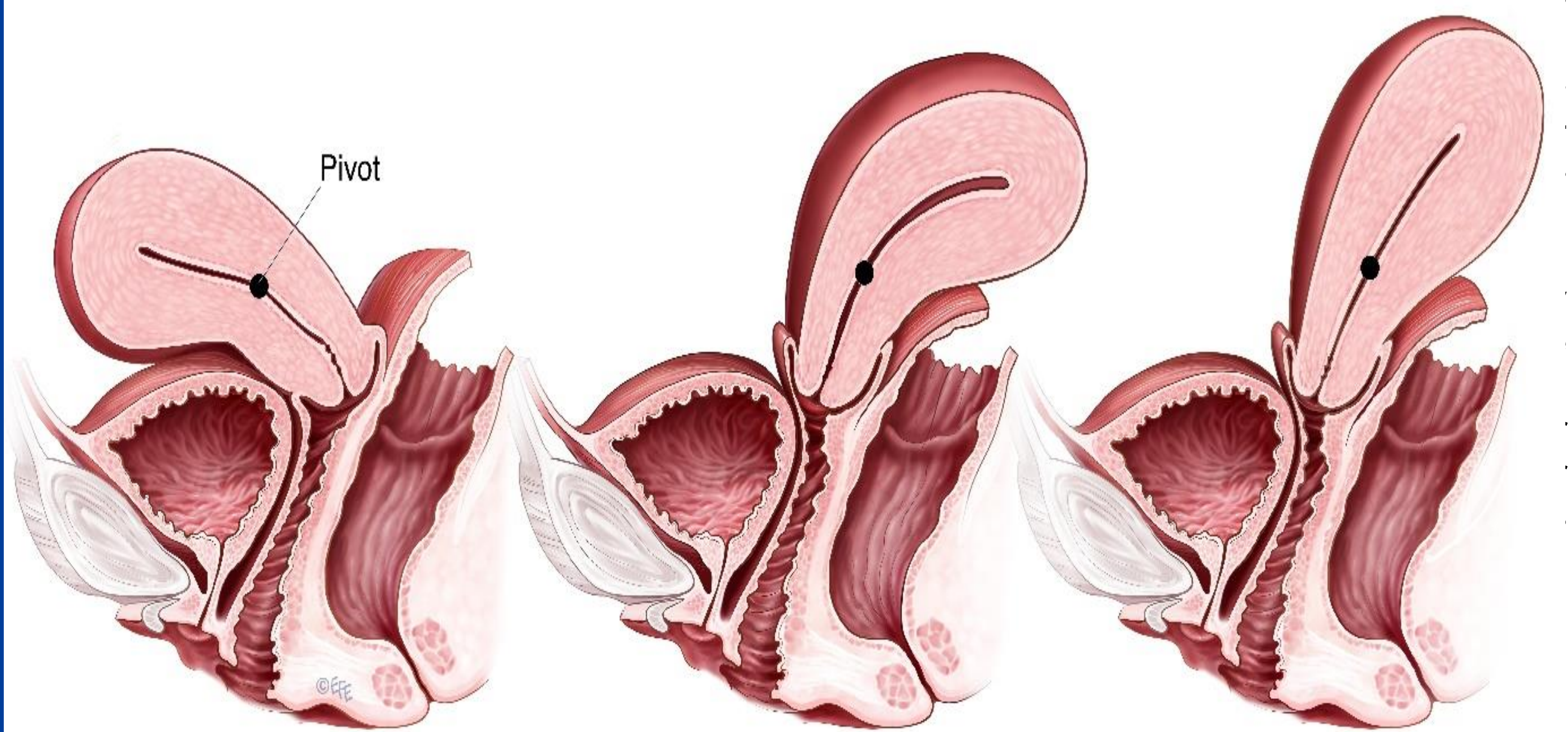
Methods

All available articles or references to the search terms of “retroverted uterus” or “uterine retroversion” in Medline and Embase databases extending back indefinitely were examined, as well as other references on the retroverted uterus derived from those or other sources.

Results

From 400 B.C. (where mentioned by Hippocrates and other ancient authors) to 2025 A.D., a total of 308 publications were able to be sourced, of which 50 (16.2%) were pre-1900. Obstetric indications accounted for 116 (37.7%) publications, nearly all (107 – 34.7%) involving the incarceration of a retroverted gravid uterus. Gynecological indications including conservative and surgical interventions accounted for 107 (34.7%) publications. Factors relevant to pelvic floor dysfunction including imaging, diagnosis and prevalence were in the remaining 85 (27.6%) publications. The majority of publications (183 – 59.4%) were since 1986.

The retroverted uterus is common with a prevalence of 16-18% (1:6) women, increasing in the presence of pelvic floor dysfunction (24%-34%). It has a long, rich and interesting history with significant interruptions in reporting. Its aetiology is more likely to be developmental with a limited acquired component. Whilst there is a familial tendency, genetic studies have been inconclusive.



Midsagittal section of the pelvis with various positions of the uterus: Anteverted (left); retroverted, retroflexed (middle); retroverted (right). © Levente Efe, BT Haylen

The most significant pelvic floor dysfunction association is with pelvic organ prolapse - uterine (up to 4.5 fold increased prevalence) and some types of vaginal prolapse (up to 2 fold increase). The likely pathogenesis is the near parallel axes of the vagina and the retroverted uterus - “intra-abdominal pressure can exert a piston-like action on the retroverted uterus driving it down the vagina”. In contrast, the anteverted uterus would be forced infero-posteriorly, receiving support from the rectum².

The literature has countless case reports of both obstetric (particularly incarceration of the retroverted, gravid uterus) and gynecological episodes of acute urinary retention. Less dramatic chronic, sometimes cyclical symptoms of voiding and defecatory dysfunction have been recorded. Despite this, large studies have shown no established relationship between the retroverted uterus and voiding dysfunction.

Other large studies have shown no relationship with other “most common” urodynamic/pelvic floor dysfunction diagnoses including: (i) urodynamic stress incontinence (USI); (ii) detrusor overactivity (DO); (iii) bladder oversensitivity and (iv) recurrent urinary tract infections (UTI)

Interpretation of Results

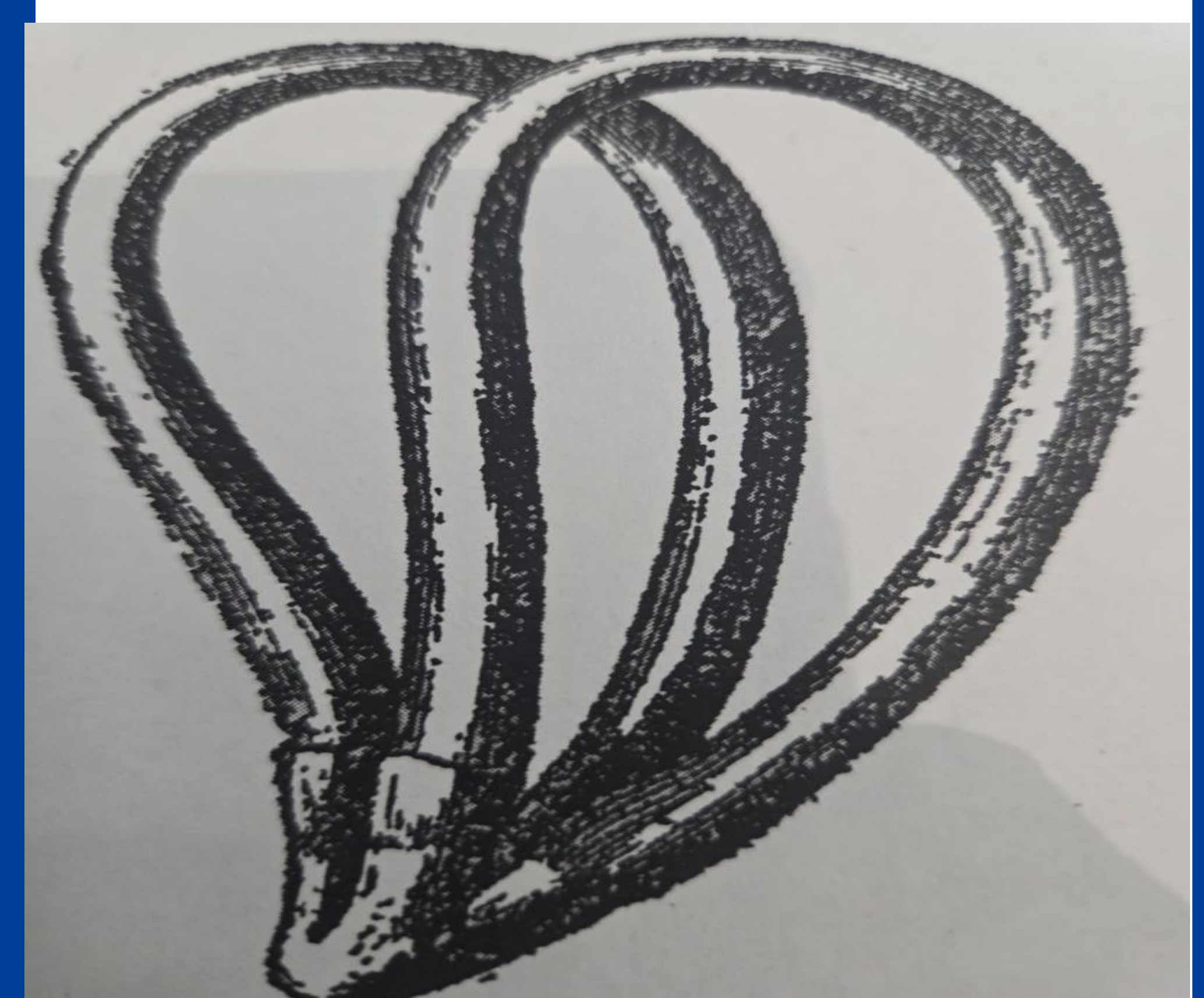
The most significant gynecological association of the retroverted uterus is with pelvic organ prolapse - uterine and some types of vaginal prolapse. There is no direct significant relationship with any of the other “most common” urodynamic/pelvic floor diagnoses.

Conclusions

The retroverted uterus has a long, rich and interesting history dating back millenia. Interest in this entity appears to have increased over the last 40 years, Obstetric scenarios predominate. It is a significant anatomical consideration in the development of pelvic organ (mainly uterine) prolapse. There are no conclusive relationships with other pelvic floor dysfunction diagnoses



FIGURE 2: Stage III Descent of a retroverted uterus.



An early pessary. From W. Murray. (1868) A spring pessary for the relief of retroversion and retroflexion of the uterus by active extra-uterine support. Lancet 1868; October 31:567. Permission granted to reproduce from Elsevier.

Reference

1: Vu D, Haylen BT, Tse K, (2025) Retroverted uterus and pelvic floor dysfunction. Int Urogynae J 1925 (In press)