The retroverted uterus: refining the description of the real time dynamic 'sliding sign'

Uche Menakaya¹ and George Condous^{1,2}

¹Acute Gynaecology, Early Pregnancy and Advanced Endosurgery Unit, Sydney Medical School Nepean, University of Sydney
Nepean Hospital, Penrith, New South Wales, Australia

²OMNI Gynaecological Care, Centre for Women's Ultrasound and Early Pregnancy, St Leonards, Sydney,
New South Wales, Australia

Ultrasonography techniques currently employed in the definition of posterior compartment deep infiltrating endometriosis (DIE) are now well described. These include the sonovaginography, first described by Dessole in 2003, for mapping the location and extent of posterior compartment DIE and more recently the real time dynamic 'sliding sign' for the assessment of the status of the Pouch of Douglas (POD).

The real time dynamic ultrasound-based 'sliding sign' deserves special mention. There is now evidence demonstrating high accuracy for prediction of POD obliteration using the 'sliding sign' technique. As a tool for assessing the status of the POD, its value in the pre-operative work up of women with potential posterior compartment DIE cannot be overemphasised. More than 60% of women with an obliterated POD have evidence of bowel endometriosis and therefore laparoscopic surgery is more difficult and longer duration. Therefore pre-operative knowledge of the status of the POD can be extremely helpful in streamlining surgical planning and allocation of appropriate laparoscopic skill mix.

As a test, the 'sliding sign' has also demonstrated high reproducibility and accuracy among different operators. Furthermore it is an easy technique to demonstrate, however the descriptions to date have not taken into account the position of the uterus, i.e. whether the uterus is anteverted or retroverted. In fact the technique described in the literature presumes the uterus is anteverted. In order to assess the real-time ultrasound-based 'sliding sign' in an anteverted uterus, gentle pressure is placed against the cervix with the transvaginal probe to establish whether the anterior rectum glides freely across the posterior aspect of the cervix (retro-cervical region) and the posterior vaginal wall. If the anterior rectal wall does glide smoothly over the posterior cervix and posterior vaginal wall then the 'sliding sign' is considered to be positive for this location. The examiner then places the left hand over the woman's lower anterior abdominal wall in order to ballot the uterus between the palpating hand and transvaginal probe (being held in the right hand) to determine whether the anterior recto-sigmoid glides freely over the posterior aspect of the upper uterine fundus. If the anterior recto-sigmoid wall does glide smoothly over the posterior upper uterine fundus during the transvaginal scan

(TVS), the 'sliding sign' in this region is then also considered to be positive. As long as the 'sliding sign' is found to be positive in both of these anatomical regions (retro-cervix and posterior upper uterus), the POD is recorded as non-obliterated.

However, the anatomical relationship of the pelvic structures, in particular the recto-sigmoid and rectum, is very different in a woman with a retroverted uterus. Specifically, the anterior rectal wall apposes the posterior upper uterine fundus while the anterior rectosigmoid apposes the anterior lower uterine segment.

Therefore demonstrating and describing the ultrasound-based 'sliding sign' in a retroverted uterus is distinctly different. To assess the real-time 'sliding sign' in a retroverted uterus, gentle pressure is placed against the posterior upper uterine fundus with the transvaginal probe to establish whether the anterior rectum glides freely across the posterior upper uterine fundus. If the anterior rectum does glide smoothly over the posterior upper uterine fundus, the 'sliding sign' is considered to be positive for this location.

Secondly, the examiner then places the left hand over the woman's lower anterior abdominal wall in order to ballot the uterus between the palpating hand and transvaginal probe (being held in the right hand) to determine whether the anterior rectosigmoid glides freely over the anterior lower uterine segment. If the anterior rectosigmoid does glide smoothly over the anterior lower uterine segment during TVS, the 'sliding sign' in this region is also considered to be positive. As long as the 'sliding sign' is found to be positive in both of these anatomical regions (i.e. the anterior lower uterine segment and the posterior upper uterus), the POD is recorded as non-obliterated.

The distinction in both describing and eliciting the 'sliding sign' does vary depending on whether the uterus is anteverted or retroverted. We hope that this clarification will be helpful when applying this technique in the outpatient setting. In women with posterior compartment DIE, the pre-operative mapping of location and extent of disease using TVS and the real time dynamic 'sliding sign' continues to improve patient counselling, timely referral to advanced laparoscopic units and the avoidance of multiple laparoscopies for women with higher stage endometriosis.