

Support and suspension apparatus of the small pelvis

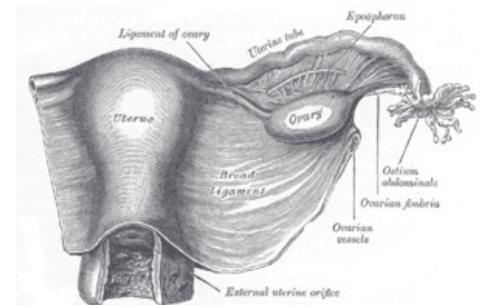
Supporting and suspension apparatus of the small pelvis^{[1][2]} is a set of anatomical structures important for maintaining female continence. It is the cause of the close relationship between the urethra and the vagina throughout their course. It is divided into three functional sections (*levels*), in the cranial part of the sheath Level I, in the middle part Level II and in the caudal part Level III^[1]. This division and malfunction of the suspension apparatus at different levels conditions different diseases and thus also different surgical solutions.

A very important structure is the **endopelvic fascia** (*fascia pubocervicalis*). It is not a strictly anatomical, but rather a functional term. It is a collective term for *all the fibrous tissue that fixes the pelvic structures to the pelvic walls*.

Level I

It is a hinge of the cervix and thus also of the cranial part of the vagina, which is fixed obliquely **dorsally up** towards the *os sacrum* and the promontory. It consists of the lower part of the parametrium and the proximal part of the paracolpium, i.e. dorsally '**ligamentum sacrouterinum**' and laterally '**ligamentum cardinale uteri**' (seu *ligamentum latum uteri*). These are "*endopelvic fascia condensations*", thickened bands of otherwise anatomically ill-defined thin tissue between the pelvic organs and the pelvic wall. Damage to these structures is solved surgically by hanging on a fixed *ligamentum sacrospinosum* (principle of the operation according to Amreich).

A defect at this level results in urethrocele and cystocele^[2].

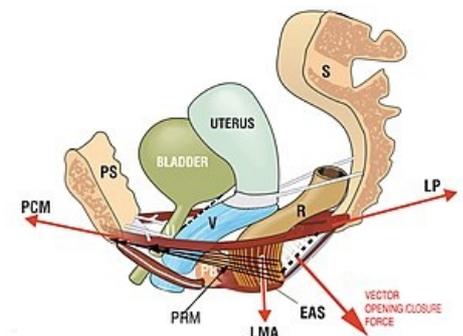


Ligamentum latum uteri

Level II

During its course, the sheath is fixed laterally to the **arcus tendineus fasciae pelvis** (ATFP), which is another reinforcement of the endopelvic fascia. It runs from the **spina ischiadica** to the lower edge of the symphysis. The vagina can thus support the urethra when compressed by increased intra-abdominal pressure (principle of the hammock, see below). The suspension itself is made by two parts of the endopelvic fascia, the first **rectovaginal fascia** extending from the ATFP to the back of the vagina and the front of the rectum, the second **pubocervical fascia** extending from the ATFP to the front wall of the vagina. This gives the vagina a forward curved course and a butterfly cross-section (H shape with the middle bar shifted towards the rectum).

With a defect at this level, the support of the urethrovesical junction is missing and its hypermobility occurs^[2]. A defect at this level can also cause a rectocele^[2].



Shown in white is the ligamentum sacrouterinum fixing the cervix dorsally upwards.

Level III

Level III is the part that determines the size of the vaginal entrance (*introitus*). It conditions the fixation of the distal sheath ventrally and supports the *levator ani muscle* from below. It ensures that the urethra, vagina, rectum and perineal membrane are in intimate contact at this level. It is an area often traumatized by distention during childbirth.

Hammock principle

Principle of Hammock

Links

Related Articles

- Principle of Hammock
- Urinary incontinence, Stress urinary incontinence
- Ligamentum latum uteri

- Cystocele

External links

- Tendinous arch of pelvic fascia (English Wikipedia article)

References

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2. *ROB, Luke – MARTAN, Alois – CITTERBART, Karel. *Gynecology*. 2. edition. Prague : Galen, 2008. 390 pp. pp. 215-222. ISBN 978-80-7262-501-7.