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Clinical evaluation of Transvaginal Mesh for Pelvic Organ Prolapse surgery

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ABSTRACT

The objective of this thesis was to increase the understanding and assess the outcomes in terms of complications, relieve of symptoms and anatomical results of anterior vaginal wall prolapse surgery using either trocar-guided transvaginal mesh or conventional anterior colporraphy, and to identify variables associated with lateral defects.

A multicenter randomized controlled trial was performed between December 2007 and December 2008 in the Nordic countries comparing transvaginal mesh surgery for anterior prolapse with the Prolift® mesh kit with traditional anterior colporraphy. Among women undergoing the above randomized controlled trial, 50 women; 27 undergoing anterior colporraphy and 23 anterior trocar guided transvaginal mesh were examined at baseline with urodynamic assessment and at two months. We found that trocar guided transvaginal mesh of anterior vaginal wall prolapse resulting in a lowering of maximal urethral closing pressures (MUCP) and increased risk for de novo stress urinary incontinence compared to colporraphy.

A prospective multicenter cohort study was performed between June 2006 and March 2007 throughout 26 clinics in the Nordic countries. 121 patients undergoing anterior transvaginal mesh surgery was prospectively evaluated at baseline and one year after surgery using the Urogenital Distress Inventory (UDI). Overall UDI scores declined from 91 before surgery to 31 one year after surgery ($p<0.001$). UDI subscales for obstructive and irritative symptoms improved one year after surgery ($p<0.001$ for both) while stress symptoms did not ($p=0.11$).

In a subanalysis from the randomized controlled trial of mesh kit versus anterior colporraphy 99 patient were included diagnosed at baseline with a lateral defects in the anterior vaginal wall. 39 patients underwent anterior colporraphy and 60 anterior trocar guided transvaginal mesh surgery and one year after surgery, a persistent lateral defect was significantly more common after colporraphy compared to transvaginal mesh (11/32 (34.4%) vs 1/42 (2.4%), risk ratio 14.4 (95% CI 2.0-106.1) ($P<0.001$).

To determine variables associated with lateral defects a cross-sectional study was performed as subanalysis of a multicenter, randomized, controlled trial. 99 patients classified as having a lateral defect and 203 patients with isolated central defect of the anterior vaginal wall were compared with regard to clinical characteristics and urogenital distress. Among the investigated patient characteristics, only hormone replacement therapy (HRT) use at baseline was associated with lateral defects (OR 2.7, 95% CI 1.2-6.3) whereas previous anterior vaginal wall repair decreased the odds for lateral defects (OR, 0.3, 95% CI 0.1-0.9) in a multivariable model. Patients with lateral defects experienced more symptoms of bulging compare with patients without lateral defects ($p=0.02$).

In conclusion, the four studies in the thesis have shown that transvaginal mesh for anterior pelvic organ prolapse provides satisfactory anatomical and subjective outcome. However, there is an increased risk of problems with stress urinary incontinence after mesh surgery. In comparison with traditional surgery, prolapse surgery with mesh still is a new method with potential risks and benefits, especially in the long term, and must be carefully considered.

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