

## HOW TO PREVENT MESH EROSION IN TRANSVAGINAL PELVIC RECONSTRUCTIVE SURGERY?

### Hypothesis / aims of study

Mesh erosion is one of the most common and distressing complications after female pelvic floor reconstruction. Following the extensive use of meshes, USA Food and Drug Administration warned about potential complications. The aim of this study was to identify the risk factors for mesh erosion during pelvic floor reconstructive surgery, and to describe a new Blood-supply Reservation Technique (BRT) as to prevent erosion.

### Study design, materials and methods

A systematic literature search of the Pubmed, Embase, Cochrane Library, CBM, CNKI and VIP databases was performed to identify the studies related to the risk factors for mesh erosion after female pelvic floor reconstruction published before February 2015. Meanwhile, 738 consecutive women underwent transvaginal pelvic floor reconstructive in our department were enrolled retrospectively in this study from September 2003 to December 2012.

### Results

A total of 29 studies containing 7222 patients and 76 animals were included in our systematic review and meta-analysis. Statistically significant differences in mesh erosion after female pelvic floor reconstruction were found in more parities vs. less parities (OR = 1.25, 95% CI: 1.06-1.48), diabetes mellitus (OR = 1.87, 95% CI: 1.35-2.57), smoking (OR = 2.35, 95% CI: 1.80-3.08), concomitant pelvic organ prolapse (POP) surgery (OR = 0.37, 95% CI: 0.16-0.84), concomitant hysterectomy (OR = 1.42, 95% CI: 1.02-1.98), preservation of uterus at surgery (OR = 0.22, 95% CI: 0.08-0.63), and senior surgeons operation vs. junior surgeons operation (OR = 0.42, 95% CI: 0.30-0.58). Meanwhile, The result of meta-analysis showed that age (OR = 0.96, 95% CI: 0.91-1.01, P = 0.08), BMI (OR = 1.04, 95% CI: 0.98-1.11, P = 0.22), menopause (OR = 0.90, 95% CI: 0.60-1.36, P = 0.62), premenopausal / estrogen replacement therapy (OR = 1.28, 95% CI: 0.98-1.68, P = 0.07), hypertension (OR = 0.90, 95% CI: 0.57-1.43, P = 0.67), pelvic organ prolapse quantification stage (OR = 0.90, 95% CI: 0.42-1.91, P = 0.78), previous pelvic surgery (OR = 1.85, 95% CI: 0.95-3.59, P = 0.07), previous POP surgery (OR = 1.05, 95% CI: 0.73-1.51, P = 0.81), previous SUI surgery (OR = 1.56, 95% CI: 0.83-2.93, P = 0.17), previous hysterectomy (OR = 0.77, 95% CI: 0.51-1.14, P = 0.19), concomitant procedure (OR = 0.78, 95% CI: 0.46-1.31, P = 0.34), concomitant SUI surgery (OR = 1.04, 95% CI: 0.73-1.49, P = 0.82), anterior prolapse repairment (OR = 0.77, 95% CI: 0.48-1.25, P = 0.29), posterior prolapse repairment (OR = 1.19, 95% CI: 0.84-1.69, P = 0.32), total prolapse repairment (OR = 0.94, 95% CI: 0.61-1.44, P = 0.76), estimated blood loss at surgery (OR = 1.63, 95% CI: 0.96-2.77, P = 0.07), postoperative sexual activity (OR = 1.60, 95% CI: 0.65-3.93, P = 0.30), and pore size of mesh (Mean Difference = -3.36, 95% CI: -7.52-0.81, P = 0.11) with significant heterogeneity (I<sup>2</sup> = 99%, P < 0.00001) was not significant risk to mesh erosion. The data from our department demonstrated that the total objective cure ratio reaches 98.2% and the rate of mesh erosion was 0.41%.

### Interpretation of results

We reviewed risk factors for mesh erosion after female pelvic floor reconstructive surgery based on published literature. The research findings suggest several factors contribute to the vaginal erosion, and the BRT holds the rates of mesh erosion at a relatively modest and harmless level even close to "zero".

### Concluding message

The study indicated that more parities, diabetes mellitus, smoking, concomitant hysterectomy, and junior surgeons operation were significant risk factors for mesh erosion. However, the mesh erosion can be minimized by using BRT.

### Disclosures

**Funding:** No. **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** it is review **Helsinki:** Yes **Informed Consent:** No