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HOW TO STOP A SURGEON'S NIGHTMARE: MESH EROSION IN TRANSVAGINAL PELVIC RECONSTRUCTIVE SURGERY?

Hypothesis / aims of study
Mesh erosion is one of the most common and frustrating complications after female pelvic floor reconstruction, which warned by USA Food and Drug Administration.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 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 by using the BRT were enrolled retrospectively in our department from September 2003 to December 2012.The continuous variables were calculated by the student t test, categorical variables (POP-Q) were calculated by the Kruskal-Wallis H test. Summary unadjusted odds ratio (OR) with 95% confidence interval (CI) was calculated to assess the strength of associations between the factors and mesh erosion.

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). The data from our department demonstrated that the total objective cure ratio reaches 98.2% and the rate of mesh erosion was 0.41%, and one limitation is the retrospective design.

Interpretation of results
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 (I2 = 99%, P < 0.00001) was not significant risk to mesh erosion.
In our retrospective study, 738 consecutive women underwent transvaginal pelvic floor reconstructive. The BRT applied during the mesh procedure, and total objective cure ratio reaches 98.2% and the rate of mesh erosion was 0.41%

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: This work was supported by the National Science Foundation for Young Scholars of China (Grant No. 81300579), the National Natural Science Foundation of China (Grant No. 81470927, 31370951 and 31170907), 135 Project of West China Hospital of Sichuan University, Technology Department of Chengdu City(No. 2014-HM01-00120-SF), Outstanding Youth Foundation of Sichuan University(2014SCU04B21), and Ministry of organization of Sichuan(Grant No. JH2015017). **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics Committee:** Ethics Committee of West China Hospital of Sichuan University **Helsinki:** Yes **Informed Consent:** Yes