52

Dällenbach P[1], Jungo Nancoz C[1], Eperon I[1], Dubuisson J[1], Boulvain M[1]
1. *Geneva University Hospitals*

INCIDENCE AND RISK FACTORS FOR PELVIC ORGAN PROLAPSE (POP) REOPERATION AFTER PREVIOUS REPAIR: A NESTED CASE-CONTROL STUDY

Hypothesis / aims of study
Risk factors for prolapse reoperation are poorly described. Results from few studies with limited sample size and limited follow up (1 to 5 years) are largely variable. The prevalence of reoperation after POP surgery reported in medical literature was estimated to range from 13 to 56% (1, 2). The objective of this study was to estimate the incidence and identify the risk factors for POP reoperation after previous POP reconstructive surgery.

Study design, materials and methods
We conducted a nested case-control study among 1811 women who underwent POP surgery from January 1988 to June 2007 in our gynecology clinic. Cases (n=102) were women who required reoperation for recurrence of POP following the first intervention through December 2008. Controls (n=226) were women, randomly selected from the same cohort, who did not require recurrent POP surgery during the same period. Cases and controls for which medical records were not available were excluded from the analysis. Each woman had a standardized preoperative prolapse assessment, using the Baden-Walker classification (classification in use in our institution during the study period). We performed a univariable and a multivariable analysis including 100 cases and 226 controls to identify the variables associated with POP reoperation after previous POP repair. We calculated that a sample size of 309 women with 103 cases and 206 controls had a power of 80% with a two-tailed alpha of 0.05 to identify a risk factor with an odds ratio of 2.

Results
The cumulative incidence of POP reoperation was 5.6% in our cohort. Mean age was 58.5 years (SD 12.2) and 62.3 years (SD 13.5) in the case and control groups respectively (P=0.02). Body mass index (BMI) was similar between groups. Grade of prolapse was equal or higher than 3 in 69% of cases and 64.2% of controls (P=0.45). In univariable analysis, risk factors included sexual activity (odds ratio (OR) 2.61; 95% confidence interval (CI) 1.50-4.56; P=0.01) and previous POP and/or urinary incontinence repair (OR 2.70; 95% CI 1.33-5.49; P=0.007). The absence of posterior repair at initial surgery increased the risk of reoperation (OR 1.67; 95% CI 0.1.01-2.77; P=0.04). Multiparity, vaginal deliveries, constipation, pulmonary disease and higher grade of preoperative prolapse were not associated with a higher risk of reoperation. There was no statistically significant difference according to the type of surgical approach (vaginal, abdominal and laparoscopic), however a trend towards a lower risk after the vaginal approach was observed (OR 0.50 95% CI 0.25-1.00; P=0.06). Use of mesh was not a protective factor (OR 1.37, 95% CI 0.60-3.10; P=0.51). In multivariable analysis, when all the abovementioned statistically significant variables and age were taken into account, sexual activity (OR 2.25; 95%CI 1.19-4.24; P=0.012) and previous POP and/or anti-incontinence surgery (OR 2.99; 95 CI 1.43-6.25, P=0.004) remained independent risk factors.

Interpretation of results
Our study shows that the incidence of reoperation for POP after previous POP repair is lower than previously reported. The incidence in our study might be underestimated, if women who had undergone POP surgery in our institution had been treated for recurrence of prolapse elsewhere. However, that number is probably low, because our clinic is the only public institution in our area, and women followed in public hospitals rarely go to private clinics due to their lack of private health insurance coverage. Moreover our health insurance system only exceptionally accept that a patient go to another area or country to be operated. The difference with previous reports is also consecutive to the definition of POP. We chose to evaluate only surgically treated recurrent prolapse, as it represents the severe end of the clinical spectrum. For the vast majority of women with physical findings of prolapse, no surgery is indicated.
Our study suggests that POP reoperation is due to preexisting weakness and is not influenced by the initial approach. The three pelvic floor compartments should be treated at initial repair to avoid recurrence. The risk factors we identified included young age and sexual activity, which probably reflects higher physical activities. We believe that prosthetic material should be limited to those women with higher risk of reoperation. The use of mesh was not associated with a lower risk of reoperation in our study. However, the number was small, and the learning curve associated with the use of vaginal or laparoscopic mesh could explain the lack of benefit observed in our study.

Concluding message
The risk of reoperation after POP surgery is lower than previously reported. Risk factors described in this study will help surgeons to correctly identify the women at risk of POP recurrence, to select specific techniques of pelvic floor reconstruction, and to use mesh in selected cases.

References
1. Whiteside JL, Weber AM, Meyn LA, Walters MD (2004) Risk factors for prolapse recurrence after vaginal repair. Am J Obstet Gynecol 191:1533-8
2. Clark AL, Gregory T, Smith VJ, Edwards R (2003) Epidemiologic evaluation of reoperation for surgically treated pelvic organ prolapse and urinary incontinence. Am J Obstet Gynecol 189:1261-7

Specify source of funding or grant	**None**
Is this a clinical trial?	**Yes**

Is this study registered in a public clinical trials registry?	**No**
Is this a Randomised Controlled Trial (RCT)?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Institutional Ethics committee of the Geneva University Hospitals**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**