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COMPARISON OF GRAFT MATERIAL AS A RISK FACTOR FOR MESH EROSION AND INFECTION FOLLOWING ABDOMINAL SACROCOLPOPEXY

Hypothesis / aims of study

Synthetic graft material in pelvic reconstructive surgery is associated with a small but significant incidence of graft erosion and infection [1][2][3]. In an effort to eliminate this complication, natural materials such as acellular porcine dermis, has been proposed as a preferred alternative. The superiority of acellular porcine dermal mesh in reducing graft erosion and infection after abdominal sacrocolpopexy has not been established. The aim of this trial was to compare the graft related complications using acellular porcine dermis to those associated with polypropylene synthetic mesh after abdominal sacrocolpopexy.

Study design, materials and methods

Institutional Review Board approval was obtained prior to the start of the study. Patients who underwent an abdominal sacrocolpopexy for urogenital prolapse from 1999 to 2003 by a single surgeon in one institution were included in this trial. Data on potential variables thought to be implicated in the rate of infection including co-morbid conditions, concurrent vaginal procedures, concomitant hysterectomy, body-mass index (BMI), and estimated blood loss (EBL) was collected. Graft related complications were defined as documented mesh erosion and/or pelvic infection including vaginal cuff cellulites, pelvic abscess, and sacral osteomyelitis. Significance level was set at $P < .05$. Multivariate analysis (logistic regression) was used to identify independent factors associated with an increase risk of graft related complications. Chi-square analysis was used to compare complication rates in cases using either synthetic or acellular porcine dermis grafts in abdominal sacrocolpopexy.

Results

There were a total of 70 abdominal sacrocolpopexies performed in the study interval, with a mean postoperative follow-up period of 12 (1-36) months. Twenty patients received synthetic mesh and 50 patients received a porcine dermal graft. Age, BMI, estimated blood loss, smoking status, co-morbid conditions, and HRT use was similar in each group. The overall complication rate was 31.4% (22/70) (95% confidence interval, 10.6-33.4), which includes complications that could not be attributed to the presence of a graft. Comparison of the graft materials revealed no difference in the incidence of graft related complications 22% (11/50) and 15% (3/20) for cases using porcine dermis and synthetic grafts, respectively (95% confidence interval, 10.6 – 33.4 and 3.1 – 33.1). Concomitant hysterectomy, EBL, BMI, menopausal status, and graft material were compared using logistic regression. Hysterectomy at the time of procedure was the only variable predictive of a graft related complication ($P<0.05$). The relative risk using polypropylene mesh associated with mesh erosion and/or infection is 1.5 (95% confidence interval, 0.4 – 6.5).

Interpretation of results

In this population, the complication rate when using either synthetic materials or porcine dermis is comparable. Concomitant hysterectomy appears to be a risk factor for infection after abdominal sacrocolpopexy. Use of non-synthetic graft material does not appear to eliminate this risk.

Concluding message

Use of acellular porcine dermis does not appear to protect against graft erosion and infection. A randomized controlled trial comparing erosion/infectious complications using either synthetic or porcine dermal graft is needed to confirm these findings.

References

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3 Use of synthetic mesh and donor grafts in gynaecologic surger. *Current Women's Health Reports* 2001; 1: 53-60.