71

Arya L[1], Novi J[1], Clemons J[2], Myers D[3]
1. Hospital of University of Pennsylvania, 2. Madigan Army Medical Center, 3. Brown University

VAGINAL PARAVAGINAL REPAIR USING PORCINE OR HUMAN CADAVERIC DERMAL GRAFT: A SURVIVAL ANALYSIS

Hypothesis / aims of study

To compare objective failure rate following vaginal paravaginal repair for anterior vaginal wall prolapse using either porcine or human cadaveric dermal graft.

Study design, materials and methods

A retrospective repeated measures cohort study approved by Institutional Review Board included all vaginal paravaginal repairs (n= 117) for anterior vaginal wall prolapse stage II or greater performed between January 2001 and August 2003. Between January 2001 and July 2002 all paravaginal repairs were performed with cadaveric dermal graft and were compared to all repairs performed between August 2002 and August 2003 with porcine dermal implant. Anterior vaginal wall prolapse was staged preoperatively and every 6 months postoperatively. All terms, definitions, and descriptions confirm to standards recommended by the International Continence Society. Changes in functional status (urinary symptoms, prolapse symptoms, and sexual activity), and complications were recorded at each visit. Objective failure was defined as recurrent anterior vaginal wall prolapse, stage II or greater. Life-table analysis including log-rank test were used to determine risk for objective failure and compare survival curves. Risk factors for recurrent anterior vaginal wall prolapse were evaluated. Vaginal paravaginal repair of anterior vaginal wall prolapse involved vaginal dissection to identify the arcus tendineus fascia pelvis. Either porcine dermal or human cadaveric graft was attached to the arcus using permanent multifilament suture (00).

Results

There was no significant difference in the mean age (62.5 vs. 65.3 years), parity (2.3 vs. 2.5) weight (153.5 vs. 157.1lbs), race (85% Caucasian vs. 87%), hormone replacement (43% vs. 49%) and prior prolapse surgery (62% vs. 55%) of the porcine dermal and cadaveric dermal graft groups respectively. Preoperative clinical findings were not significantly different in the two groups.

Table 1: Preoperative clinical findings in the two groups.

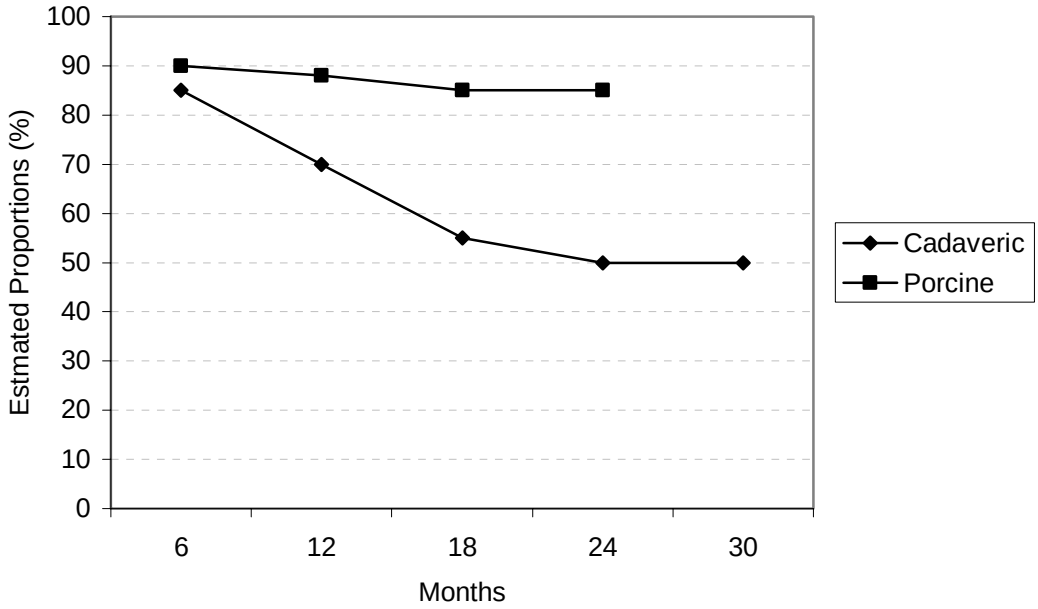
	Porcine Implant (N=72)	Cadaveric graft (N= 45)	P value
Vaginal bulge	68 (95%)	43 (97%)	NS
Stress urinary incontinence	26 (36%)	14 (31%	NS
Urge incontinence	27 (38%)	16 (36%)	NS
Voiding difficulty	10 (14%)	6 (13%)	NS
Stage II anterior wall prolapse	9 (13%)	8 (18%)	NS
Stage III anterior wall prolapse	46 (64%)	27 (60%)	NS
Stage IV anterior wall prolapse	17 (23%)	10 (22%)	NS
Vault prolapse	52 (73%)	30 (67%)	NS
Posterior wall prolapse	70 (98%)	43 (96%)	NS
Concurrent prolapse surgery	70 (98%)	43 (96%)	NS

The median length of follow up for the cohort was 22 months (range 19-28 months) in the cadaveric dermal and 18 months (range 7-20 months) in the porcine dermal group. Postoperatively, 31 (69%) women in the cadaveric dermal group had objective failure as compared to 3 (4%) in the porcine dermal group (p = <.0001).

Life-table analysis of the postoperative 6-month interval examinations demonstrated that the cumulative probability of an objective failure in the cadaveric dermal group was 0.2 (95%CI 0.1-0.3) at 6 months, 0.30 (95%CI 0.1-0.33) at one year, 0.45 at 1.5 years (95% CI 0.1-0.7),

0.5 (95% CI 0.2-0.7) at 2 years, 0.5 at 2.5 years (95% CI 0.2-0.8). In the porcine dermal group, the cumulative probability of an objective failure was 0.1 at 6 months, 0.12 (95% CI 0.05-0.25) at one year, 0.15 at 1.5 years (95% CI 0.09-0.33) and 0.15 at 20 months (95% CI 0.09-0.33) (Figure 1). The relative risk for objective failure for the porcine dermal group was 0.2 (95% CI 0.1, 0.5), $p < 0.01$) as compared to the cadaveric dermal group.

Figure 1. Survival Curves for cadaveric and porcine dermal groups



The rate of other post-operative complications in the porcine dermal and cadaveric dermal groups was not significantly different (recurrent urinary incontinence 12% vs. 21%, dyspareunia 4% vs. 2%). No graft erosions were noted in either group.
No identifiable risk factors for objective failure were found among the demographics, grade of prolapse, co-existent prolapse, and prior pelvic surgery. A concurrent suburethral sling procedure did not prevent objective failure (Fisher's test, P= 0.75).

Interpretation of results

The rate of recurrence of anterior vaginal wall prolapse following vaginal paravaginal repair with cadaveric graft (69%) was significantly greater than with porcine dermal graft (4.2%). Since the duration of follow up was greater for the cadaveric dermal group than the porcine dermal group, we used survival analysis to "censure" patients from further analysis on the date of recurrence. Survival analysis confirmed that the risk of recurrence of anterior vaginal wall prolapse was significantly lower with vaginal paravaginal repair using porcine dermis as compared to cadaveric dermis. Additionally, no other risk factor for objective failure was found in demographic variables, grade of prolapse, co-existent prolapse and concurrent procedures.

Concluding message

The risk of recurrence of anterior vaginal prolapse is lower following vaginal paravaginal repair using porcine dermal implant as compared to cadaveric dermal graft.