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Title (type in CAPITAL LETTERS, leave one blank line before the text) BIOMECHANICAL AND TENSILE STRENGTH OF AUTOLOGOUS, CADAVERIC, AND SYNTHETIC SLINGS: WHICH IS STRONGER? A COMPARATIVE ANALYSIS																																			
Aims of Study. The aim of this study was to compare the tensile strength and biomechanical properties of patch slings constructed from autografts, allografts, and synthetic biomaterials Methods. Patch grafts (2x4 cm) were obtained from commercially available cadaver allografts, synthetic biomaterials, and from women undergoing vaginal prolapse surgery. Cadaver and synthetic grafts were 1 mm in thickness, autologous tissues were full-thickness. Patch grafts were constructed into a sling using No 1 Prolene suspension suture (cross-folded technique for cadaver fascia lata). Human tissues were tested within 2 hours of the harvest. Prolene sutures were tied onto two grippers of Instron tensiometer and uniaxially loaded in tension with a crosshead speed of 5 mm/min until failure. From the load deformation curve, the mechanical properties were calculated: displacement at maximum load (mm) and maximum load to failure (kN). Results. <table border="1"><thead><tr><th>Sling Material</th><th>N</th><th>Displacement (mm)</th><th>Max Load (kN)</th></tr></thead><tbody><tr><td>cadaver dermis (Alloderm)</td><td>10</td><td>27 884 ± 1 463</td><td>0 068 ± 0 011</td></tr><tr><td>cadaver fascia lata (Faslata)</td><td>10</td><td>31 561 ± 3 492</td><td>0 058 ± 0 022</td></tr><tr><td>Gore-tex</td><td>10</td><td>51 864 ± 13 866</td><td>0 076 ± 0 010</td></tr><tr><td>prolene mesh</td><td>10</td><td>67 835 ± 3 090</td><td>0 063 ± 0 015</td></tr><tr><td>human dermis</td><td>10</td><td>48 945 ± 22 461</td><td>0 075 ± 0 006</td></tr><tr><td>human rectus fascia</td><td>10</td><td>30 742 ± 12 041</td><td>0 038 ± 0 021</td></tr><tr><td>human vaginal wall</td><td>10</td><td>15 589 ± 9 297</td><td>0 021 ± 0 018</td></tr></tbody></table>				Sling Material	N	Displacement (mm)	Max Load (kN)	cadaver dermis (Alloderm)	10	27 884 ± 1 463	0 068 ± 0 011	cadaver fascia lata (Faslata)	10	31 561 ± 3 492	0 058 ± 0 022	Gore-tex	10	51 864 ± 13 866	0 076 ± 0 010	prolene mesh	10	67 835 ± 3 090	0 063 ± 0 015	human dermis	10	48 945 ± 22 461	0 075 ± 0 006	human rectus fascia	10	30 742 ± 12 041	0 038 ± 0 021	human vaginal wall	10	15 589 ± 9 297	0 021 ± 0 018
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There was no statistical difference in maximum load to failure among cadaver, synthetic, and human dermis slings, $p > 0.01$. Gore-tex, prolene mesh, cadaver dermis, and human dermis graft remained intact. 7/10 (70%) cadaver fascia lata graft tore while Prolene sutures broke in 3/10 (30%). A significant difference in maximum load to failure was seen in human dermis sling compared to vaginal wall and rectus fascia, $p < 0.001$. 8/10 (80%) rectus fascia graft tore while Prolene sutures broke in 2/10 (20%). All 10/10 (100%) vaginal wall grafts tore while Prolene suture remained intact. Conclusions. Tensile strength of cadaver, synthetic, and dermis patch sling is greater than rectus fascia and vaginal wall patch sling. When patch slings are used with rectus fascia, vaginal wall, and cadaver fascia lata, the risk of suture pull-through must be considered.																																			