

**Figure 1**



**Figure 2**



**Figure 3**

 **Figure 4**

**Figure Captions**

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| Computational finite element modeling of the penis and penile compression clamps: (a) A three-dimensional (3D) model of the penis, with one example of a contoured compression clamp and corresponding loading configuration. (b) An axial cut through the penis, showing the skin (**S**), fat (**F**), tunica albuginea (**TA**), corpus cavernosum (**CC**), corpus spongiosum (**CS**) and urethra (**U**). (c) The flat, angled, contoured and contoured with knurl clamps, which were modeled in this work (left to right). | **Figure 1**  |
| Distributions of effective tissue stresses in an axial cut through the penis, while using different penile clamps, at 50% closure of the urethra. **F 25**, **F 50** and **F 100** are flat clamps with stiffnesses of 25, 50 and 100 kPa; **A 25**, **A 50** and **A 100** are angled clamps with stiffnesses of 25, 50 and 100 kPa; **C 25**, **C 50** and **C 100** are contoured clamps with stiffnesses of 25, 50 and 100 kPa; **Cuff** is a cuff-type clamp and **Knurl** is a contoured clamp (50 kPa) with knurl (100 kPa).  | **Figure 2**  |
| Comparison of maximal effective and shear strains and stresses in skin, fat and tunica albuginea, while using different penile clamps, at 50% closure of the urethra. **F 25**, **F 50** and **F 100** are flat clamps with stiffnesses of 25, 50 and 100 kPa; **A 25**, **A 50** and **A 100** are angled clamps with stiffnesses of 25, 50 and 100 kPa; **C 25**, **C 50** and **C 100** are contoured clamps with stiffnesses of 25, 50 and 100 kPa; **Cuff** is a cuff-type clamp and **Knurl** is a contoured clamp (50 kPa) with knurl (100 kPa).  | **Figure 3**  |
| Distributions of (a) effective tissue strains and (b) effective tissue stresses, in an axial cut through the penis, while properly using a flat 50 kPa penile clamp (**F 50**) and with a 5˚ tilt of the bottom half of the clamp (**Tilt 50**), representing misuse or malfunction of the clamp.  | **Figure 4** |