

S2: Supplementary Material: Second example of imaging folds within the bladder dome

In this supplementary text, we provide a second investigation of the dome of an unfixed voided bladder. In this study, the bladder was harvested from a male Sprague Dawley rat (3-4 month old) and imaged using multiple modalities as described in Method E of the main text. As for the female bladder, (Fig. 2 of the main text), imaging under high resolution micro-CT was used to visualize the lumen within the contracted bladder, Fig. S3(A). The objective of the imaging study was to determine the morphology of the wall in the thickened region where the lumen was narrowed. To enable imaging of this region, the bladder was first transversally cut where the wall was thickened, in this case, 3 mm above the dome apex, Fig. S3(C). By transversally cutting this region, the interior of the dome could be imaged using both dissection scope imaging, Fig. S3(E) and MPM imaging, Fig. S3(F). As for the voided bladder in Figs. 2 and 8, the center of the closed dome region was found to be filled with folds, (arrows, Fig. S3(F)).

Case 2- MPM Imaging

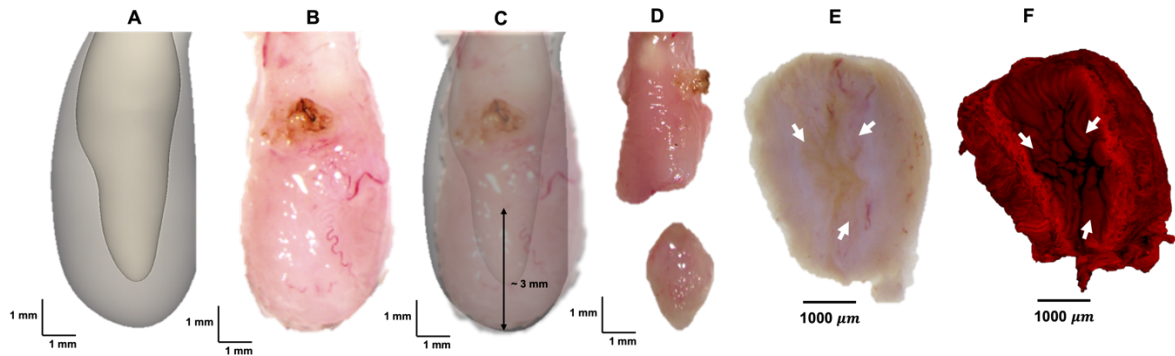


Figure S3. Multimodal imaging of a voided male bladder (Case 2): A) High resolution micro-CT image showing the bladder lumen (dome apex at bottom of figure); B) Dissection scope image of same bladder specimen; C) Overlay of A and B to identify the narrowed lumen region within the bladder, in preparation for bisection; D) Bisection of bladder prior to imaging inside the dome; E) Dissection scope image looking down into the bladder dome; F) Multiphoton image of the bladder dome in approximate orientation as in (E). Folds in the inner layer are visible under MPM (arrows). The red signal arises from the second harmonic generation (SHG) signal from collagen fibers.