

Supplementary Material

**Non-invasive ultrasound localization microscopy (ULM) in azoospermia:  
connecting testicular microcirculation to spermatogenic functions**

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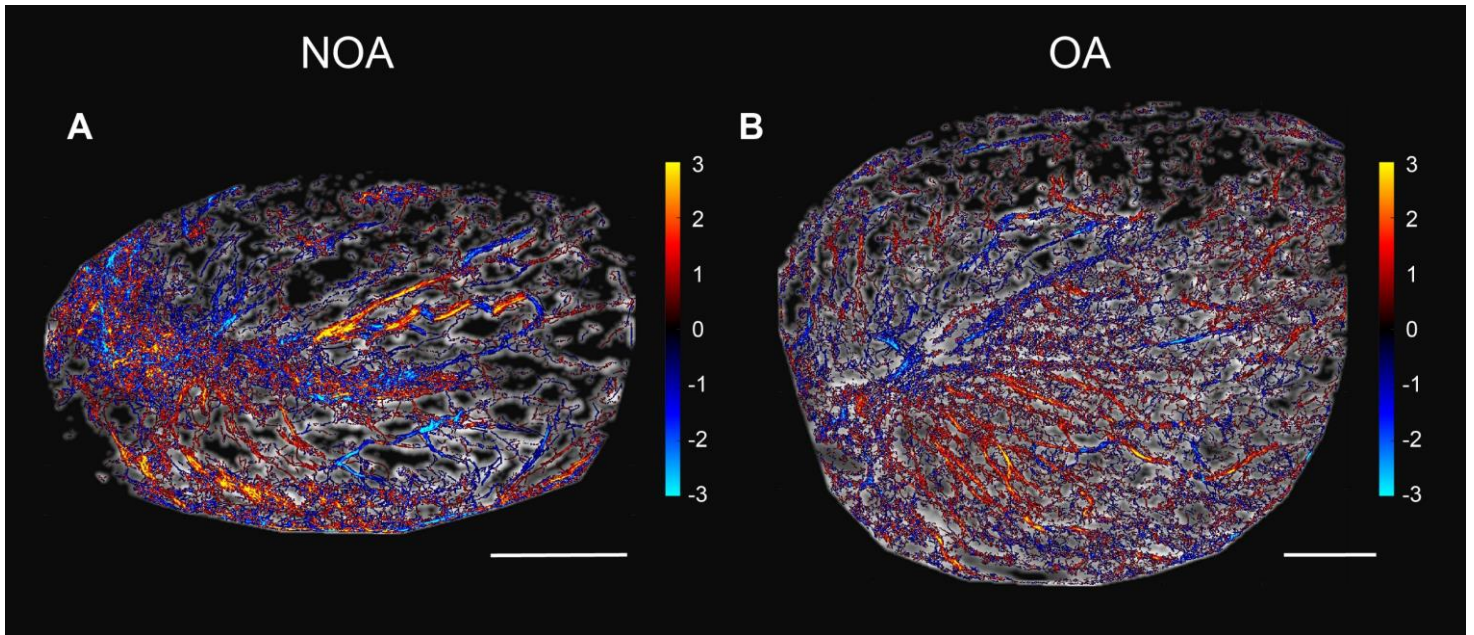
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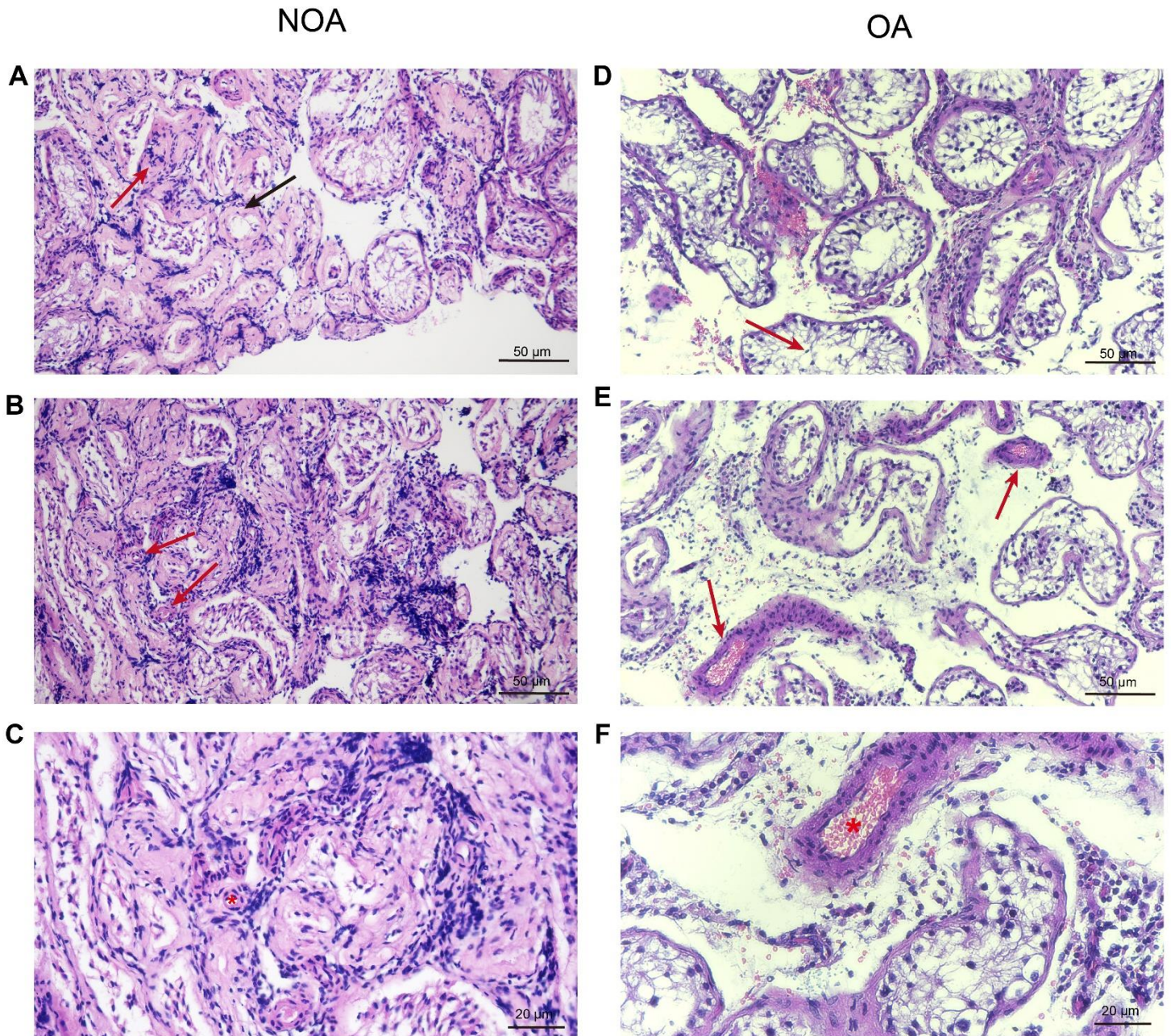
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**Figure S1.** Superimposed ultrasound localization microscopy (ULM) super-resolution (SR) images of non-obstructive azoospermia (NOA) and obstructive azoospermia (OA) patients with their corresponding MIP images. (A) shows the image for NOA, while (B) shows the image for OA. Scale bars = 5 mm.





**Figure S2.** Histopathological analysis of testicular tissue in non-obstructive azoospermia (NOA) and obstructive azoospermia (OA) patients. Panels A-C represent NOA, while panels D-F represent OA. (A) The red arrow indicates interstitial fibrosis, and the black arrow shows hyalinization of the seminiferous tubules. (B) The two red arrows pointed to atrophic blood vessels in NOA, with one of them marked by an asterisk in (C) at a magnification of  $\times 20$ . (D) The red arrow identifies a spermatozoon. (E) The two red arrows highlight congested and dilated blood vessels in OA, with one of them marked by an asterisk in (F) at a magnification of  $\times 20$ . The magnification for the other images is  $\times 10$ .