Histology of the testes

Stage I: Recovery. The lumen of the testes was full with nutritive phagocytes and a thin layer of basophilic spermatogonia and primary spermatocytes (thickness <10 µm). Proliferation of spermatogonia was evident along the acinal walls. Nutritive phagocytes completely filled the lumen and contained eosinophilic droplets (thickness <130 µm) (Online Resource 2-I, Table 2).

Stage II: Growing. The spermatocytes were growing out in layers (10-30 µm) from the acinal walls into the lumen that was now packed with a mesh of eosinophilic nutritive phagocytes cells (thickness 80-120 µm). Columns of spermatocytes projected towards the lumen (Online Resource 2-II, Table 2).

Stage III: Premature. The spermatocytes had filled the lumen (thickness 30-60 µm) and spermatozoa detached from the tips of columns and accumulated in the lumen. The nutritive phagocyte layer surrounding the columns was no longer as thick (30-80 µm) (Online Resource 2-III, Table 2).

Stage IV: Mature. The testes were filled by a dense basophilic mass of spermatozoa (60-80 µm). The nutritive layer lining the acinal walls was greatly reduced (thickness 10-30 µm) (Online Resource 2-IV, Table 2).

Stage: V: Partly spawned. The mass of spermatozoa was less concentrated, with spaces in the lumen (thickness 10-60 µm) vacated due to spawning. The nutritive phagocyte layer was thicker and had started to accumulate eosinophilic material (thickness <10 µm) (Online Resource 2-V, Table 2).

Stage VI: Spent. The acinus was empty except for remnant spermatozoa that formed clumps or large dense basophilic masses. The spermatocyte layer was thinner along the acinus walls (thickness ≤ 10 µm). A pale meshwork of nutritive phagocytes was present at the periphery of the acinus after spawning (thickness ≤ 30 µm) (Online Resource 2-VI, Table 2).
Online Resource 2. Histological sections of *Diadema* aff. *antillarum* testes: Stage I: recovering testes with nutritive phagocytes (NP) completely filling lumen; primary spermatocytes (PS) present along acinal wall. Stage II: growing testes with columns of spermatocytes (Sc) projecting towards lumen filled with nutritive phagocytes (NP). Stage III: premature testes showing thicker spermatocyte (Sc) columns along acinal wall; nutritive phagocyte layer (NP) reduced. Stage IV: mature testes with a central mass of spermatozoa (S) and acinal wall filled with spermatocytes (Sc); nutritive phagocytes (NP) reduced to a thin layer between spermatocyte columns. Stage V: partly spawned testes with lumen partially devoid of contents by spawned spermatozoa showing few vacant spaces in the lumen (VS); remant sperm present (R); spermatocytes (Sc) occupying almost all acinus; nutritive phagocytes between spermatocyte columns (NP). Stage VI: spent testes with many vacant spaces in lumen (VS); growing nutritive phagocyte layer (NP) along acinus wall and surrounding remnant spermatocyte cumulus (RScC).