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Cryopreservation of testicular tissue in pre-pubertal and adolescent boys at risk for infertility: a low risk procedure

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Summary *Introduction:* Cryopreservation of testicular tissue (TT) has become an increasingly attractive option for fertility preservation (FP), particularly for pre-pubertal boys at risk for gonadotoxicity from cancer therapy. At our institution, all at-risk families undergo counseling regarding infertility risk and available FP strategies, including this vulnerable patient population. As the technology required to use the acquired tissue is, as yet, unproven, it is paramount to document minimal morbidity and complications from this procedure. Herein, we report these outcomes for all pre-pubertal patients who have undergone TT biopsies for FP.

Methods: We retrospectively reviewed consecutive patients who underwent unilateral open TT biopsies between January 2014 and December 2016. Patient diagnosis, age, concomitant procedures, anesthetic type, complications, procedure times, planned therapy, and bleeding were evaluated.

Results: Of a total of 34 patients, mean age at biopsy was 6.9±4.4years. Diagnoses included: leukemia/lymphoma (*n*=12), solid tumors (*n*=15) and non-neoplastic disorders (hemophagocytic lymphohistiocytosis, aplastic anemia; *n*=7). Twenty-two patients (64.7%) were scheduled for stem cell transplantation. Eleven (32.4%) patients had not received any chemotherapy prior to TT biopsy, while all others had exposure preceding the biopsy. Biopsies were performed in conjunction with other procedures (central line placement, bone marrow biopsy, lumbar puncture, lymph node biopsy) in 29 cases (85.3%), with stand-alone procedures performed in the