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Biobanking with histological annotation: A 3000 prostate tissue repository

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To provide researchers with the highest quality prostate cancer tissues, we developed a new protocol for tissue collection from prostatectomies. Since prostate cancers cannot be grossly appreciated, microscopy is required to identify tumor areas. We collected 2,737 frozen blocks from 415 consented patients in 2010-2014 under an IRB-approved protocol. During regular submission of radical prostatectomy cases in the clinical pathology laboratory, two central slices of the prostate were obtained for banking. The inked margins were removed and with the rest of the specimen. The remainder was frozen into up to eight cassettes. After the case was signed out, a diagnosis was obtained for all frozen blocks. Two anatomic pathologists reviewed the slides and recorded the tissue size, tumor size and percentage, Gleason sum (GS) and percent inflammation. 451 out of 2,737 blocks contained cancer (16.5%) while 174 out of 415 cases contained cancer (41.9%). The greatest diameter of the tumor ranged from 0.1-0.3 (22%), 0.4-0.9 cm (48%) and ≥ 1 cm (30%). GS 6 was present in 24.8%, GS 7 in 46.1%, GS 8 in 10%, GS 9 in 16%, and GS 10 in 3.1%. Seventy slides contained a tertiary score (15.6%). Inflammation amounted to 10% in 56.1% of slides, 20% in 35.7% of slides and 30-40% in 8.3% of slides. For each slide, histological parameters were entered into designated and searchable fields within the OnCore database. Altogether, our protocol has created a precise inventory in the biobank and significantly increased the speed and efficiency of distributing prostate cancer tissues.

Biography

Xiaopu Yuan has completed his MD in 2nd Medical University in Shanghai China. He had been practicing Surgical Pathology for 13 years before immigrating to US. After pathology fellowship program in Mayor Clinic, he joined FHCRC as a Research Pathologist and worked there for 12 years. Since 2011, he has been working in Biobank and Translational Research Core at Cedars-Sinai Medical Center as a Research Pathologist. He has publications in China and US.

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