Rhabdomyosarcoma of the Prostate in a Young Adult: Importance of Imaging in the Setting of Low Clinical Suspicion

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A 32-year old male experienced urine retention and underwent urine catheterization. He was diagnosed with prostate enlargement. After a few months, he noticed a lump in his lower abdomen and underwent contrast-enhanced abdominal CT in October 2018 – it showed exophytic prostatic mass, infiltrating seminale vesicles and urinary bladder. There was no metastases. Transrectal biopsy showed prostatic rhabdomyosarcoma. He was referred to our center to undergo chemoradiation.

On admission he had worsening lower abdominal pain and fever. Laboratory examination showed leukocytosis and *Klebsiella pneumoniae* in urine culture. Contrast-enhanced abdominal MR in January 2019 showed enlarged iso-hypointense T1WI prostatic mass (RECIST 1.1 progressive disease) with nodal and spinal metastases. Leukocytosis persisted and procalcitonin serum was still elevated after prolonged antibiotic treatment. Patient didn't undergo chemoradiation and was discharged on his own request.

Rhabdomyosarcoma of the prostate is extremely rare in adults, the available literature is limited to case reports and series. An infiltrative, heterogenous mass can be seen on CT and nonspecific hypointensity can be seen on T1WI MR. CT and MR findings in this patient was consistent with the available literature. Diagnosis delay may happen due to low clinical suspicion in young adults. Rhabdomyosarcoma progresses very fast and aggressively, a few months delay can make significant impact on the cancer staging, as seen in this patient. We could learn CT and MRI features of rhabdomyosarcoma of the prostate, and the importance of early imaging when it's not clinically suspected.