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European Association of Urology

Letter to the Editor

Re: Philip S. Macklin, Mark E. Sullivan, Charles R. Tapping, et al. Tumour Seeding in the Tract of Percutaneous Renal Tumour Biopsy: A Report on Seven Cases from a UK Tertiary Referral Centre. Eur Urol 2019;75:861–7

Percutaneous renal tumour biopsy is increasingly being used to avoid unnecessary surgery in the event of a benign lesion, to obtain histology before ablative treatment, and for selection of medical treatment in metastatic renal cell carcinoma (RCC) [1]. Tumour seeding along the needle tract is thought to be anecdotal. In their article, Macklin et al. [2] drew attention to the risk of tumour dissemination during transcutaneous renal tumour biopsy (RTB). They present seven cases of tumour seeding of the RTB tract. All of the biopsies were performed using the coaxial technique, which is generally recommended to protect against seeding [1]. RTB tract seeding was found in 1.2% of the biopsies and in 87.5% (six/seven) the histological type was papillary RCC (pRCC; substratification not shown; I assume type 1); only one was clear cell RCC. In the pRCC subgroup the risk of seeding was substantially higher at 12.5%.

What do we know about pRCC type 1? It has a typical histology of narrow papillae without any binding, and only microcapillaries in papillae, that explains its typical clinical signs. Narrow papillae without any binding and a tough pseudocapsule explain the ideal rounded shape (Pascal's law) and fragility (specimens have a “minced meat” structure). Tumour growth causes necrotisation of papillae, which is a source of hyperosmotic proteins that cause subsequent “growth” of the tumour, fluid inside the tumour, and only a serpiginous, contrast-enhancing margin. Only microcapillaries explain the minimal postcontrast attenuation on computed tomography. pRCC type 1 can imitate a pathologically changed cyst (Bosniak IIF or III). The typical signs of pRCC type 1 are as follows: an ochre colour, more frequently exophytic, extrarenal growth, low World Health Organisation 2016/International Society of Urological Pathology (Fuhrman's) grade, and low malignant potential; more than three-quarters can be treated using nephron-sparing surgery [3–5].

The conclusions for clinical practice that can be drawn from the paper by Macklin et al are that a substantial risk of RTB tract seeding exists (1.2%), especially in pRCC (12.5%), and therefore the risk of seeding should be added to the typical clinical signs already known for pRCC type 1, probably due to the fragility of the tumour papillae. In addition, a coaxial technique protects the abdominal wall, but not the surrounding tumour tissue.

Conflicts of interest: The author has received company speaker honoraria from Covidien, Olympus, Janssen, and Astellas; has participated in trials for Janssen; and has received grants/research support from Ipsen.

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