

TUMOUR BIOPSIES - REACHING THE CORE

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Aim: Percutaneous biopsies of solid renal tumours are crucial in planning chemotherapy and the timing of surgical resection. The number of cores taken is operator dependant and the intervention can result in inadequate tissue for diagnosis or tumour rupture with consequent upstaging. This study attempts to define the minimum number of cores required for testing and also to document the incidence of tumour rupture secondary to biopsy and its relationship to number of core samples taken.

Method: Biopsy technique was percutaneous ultrasound guided in all cases using the coaxial technique with a 14 or 16Fr needle at the operator's discretion.

Single centre retrospective review of prospectively collected data between February 2002 and September 2016.

Data on demographics, diagnosis, diagnostic adequacy and number of cores were collected. Details of whether immunohistochemistry and genetic testing had been performed on the biopsy tissue were also collected.

Results: Renal units biopsied N=70; M:F 31:38 Median(range) age 48 (3-188) months
Diagnosis included Wilms tumour in 62 cases and other diagnoses in 8(Mesoblastic nephroma(1); Primitive Neuroectodermal Tumour(1); Rhabdomyosarcoma(1); Nephroblastomatosis(2); oxalosis(1); nephrogenic rest(1); Neuroblastoma(1))

Median number of cores(range) was 4(1-10). There were 4 non-diagnostic biopsies which had a median (range) number of cores 3(1-6)

There was one tumour rupture following a biopsy and this patient had 7 cores taken.
The lowest number of core biopsies with 100% diagnostic accuracy was 3 and the lowest number able to give diagnosis, immunohistochemistry and genetics was 1 core.

Conclusion: Three percutaneous biopsy cores are the minimum required for an accurate diagnosis. One single core can contain enough tissue for diagnosis, immunohistochemistry and genetic testing.

We would recommend taking three subjectively good cores as assessed an experienced operator.

In our experience rupture secondary to biopsy is very rare and occurred in one case where seven cores were taken.

Ongoing analysis includes assessment of other anatomical sites.