
Role of ultrasound diagnosis of cancer urinary bladder

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Ultrasonographic diagnosis of urinary bladder carcinoma can be subdivided into two problems : 1- Tumour detection (including the differential diagnosis), and 2- Tumour staging. Exophytic bladder carcinomas appear as intraluminal polypoidal filling defects projecting from the echogenic bladder wall into the anechoic bladder lumen. They are hypoechoic compared to the echogenic bladder wall and do not alter their location on changing patient position. Large tumours have complex architecture due to haemorrhage and necrosis. Superficial non-infiltrating tumours give an impression of mucosal irregularities without distortion or fixation of the bladder wall with sharp demarcation between the tumour and the adjacent normal mucosa. They have well defined base. Infiltrating tumours cause disruption of the echogenic bladder wall beneath the tumour with diminution of the bladder capacity. They tend to have broader base. Extravesical extension shows features of infiltrative tumour and in addition irregular masses are present in the surrounding pelvic tissues. Concerning the ultrasonographic staging of urinary bladder carcinoma both Jewett-Strong-Marshall and TNM classifications are used. The ultrasonographic findings based on rigidity and continuity of the bladder wall as well as the reduction of the bladder capacity. More recently, the degree of tumour infiltration into the bladder wall is exposed under various levels of amplifier gain. Accordingly, bladder tumours can be classified as follows:- Superficial tumours (Ta - T1a): the echogenic bladder wall underlying the less echogenic tumour appears smooth and uninterrupted without deformity or reduction of the bladder capacity.- Tumours infiltrating the bladder wall (T1b - T2a) : the echogenic bladder wall is interrupted without deformity or reduction of the bladder capacity.- Tumours extending beyond the bladder wall (T2b - T4): the perivesical tissue is involved by the hypoechoic tumour tissue with deformity of the wall and reduction of the bladder capacity. The perivesical structures may be involved. The internal iliac lymph nodes are the most common sites of metastases. Pelvic lymphadenopathy are often detected by transabdominal approach. The main role of transurethral scanning is useful in evaluating the primary tumour and to monitor the depth of transurethral resection of a bladder tumour. Transrectal and transurethral scanning can offer information concerning the conditions of the bladder wall e.g. detecting the degree of tumour infiltration. An overall accuracy of only 62% in evaluating bladder tumours by ultrasound. This accuracy rate is related to the size and location of the tumour. The detection accuracy for tumours less than 5 mm in diameter was as low as

33.3 compared to 83.3% for those between 1-2 cm and 95% for those more than 2 cm diameter. A low accuracy rate was observed for tumours located in bladder neck and dome in contrast to those located on the posterior and lateral walls.