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EDITORIAL COMMENT

A visibly complete transurethral resection (TUR) of non-muscle-invasive bladder tumors is essential to achieve local control and optimize response to intravesical therapy. To remove bladder tumors, they must first be seen. And once detected, how does one verify all tumors have been completely resected? Cystoscopy and TUR are usually performed using white light imaging (WLI). WLI may not reveal every papillary tumor or mucosa involved with carcinoma in situ, leading to incomplete resection and treatment failures. As an adjunct to WLI, cystoscopy enhancement technologies have now entered clinical practice. One of these is narrow band imaging (NBI) cystoscopy. NBI filters white light into 2 narrow bands that enhances contrast between normal mucosa and mucosal vascular tumors (Ref#15 article).

In this well-designed, prospective, randomized study, and with the 2 goals of TUR in mind (tumor detection and feasibility of complete resection), the authors evaluated how WLI and NBI complement each other as a “surgical tool and technique.” The 2 light modes were sequenced by inspection/TUR (WLI first, then NBI TUR vs NBI first, then WLI TUR). After WLI inspection/TUR, NBI detected additional lesions (half malignant) in 37% patients. After initial NBI/TUR, WLI saw more lesions (none malignant) in 9% of patients. Thus, NBI detected additional tumors in 28% more patients as a secondary adjunct to WLI/TUR vs the alternative sequence, albeit with more false positives.

Urologists participating in the study found NBI was not ideal to resect large (>3 cm) or multiple (>3) tumors because bleeding reduced visualization. The authors concluded that NBI was better suited to detect residual or “missed” disease as an adjunct to WLI rather than first inspection and TUR using NBI. NBI reduces light illumination about 20%, and since the filtered light is absorbed by hemoglobin, fields of vision can be compromised if there is bleeding.

Authors correctly conclude that NBI is superior to WLI in detection of tumors, and intuitively should facilitate more complete resections. However, “seeing” tumors by any method does not mean they are verifiably removed! The quality of the TUR (and the urologists’) is unknown and unquantified variables confounding all studies of non-muscle-invasive bladder tumors. Further, some surgeons opted out of the study and others broke protocol with one arm of the study, which also illustrates how urologists (experience and practice patterns) might impact cancer outcomes. Nevertheless, the study is convincing that NBI detects more tumors than WLI alone and facilitates more visibly complete TURs, using either WLI- or NBI. Not addressed by this study is whether NBI plus WLI-TUR impacts recurrence and/or progression-free survival. That is yet to be determined.

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