

## A PROSPECTIVE STUDY OF THE USEFULNESS OF CYSTOSCOPY AND BLADDER BIOPSY, IN THE DIAGNOSIS AND MANAGEMENT OF LOWER URINARY TRACT DISORDERS IN WOMEN.

### Hypothesis / aims of study

This study evaluates the clinical utility of cystoscopy and bladder biopsy in the diagnosis and management of women with recurrent urinary tract infection (UTI), bladder pain, or symptoms of overactive bladder syndrome (OAB). Despite the publication of expert opinion and guidelines(1), wide variation exists in the use of cystoscopy for these benign conditions(2). The recent trend towards the use of flexible cystoscopy for diagnosis, precludes the use of cold cut biopsy. The increased diagnostic value of biopsy has to be balanced against the increased risks of haemorrhage, infection and bladder perforation.

### Study design, materials and methods

In two urogynaecology practices, we prospectively studied 60 consecutive women, referred for cystoscopy to investigate recurrent UTI, or bladder pain, or symptoms of OAB. We excluded women with frank or microscopic haematuria, in whom cystoscopy was clearly indicated according to our national guidelines.

In each case, the consultant urogynaecologist declared the presumptive diagnosis and preferred management plan, in advance of the procedure. After cystoscopy, but before histology was available, the consultant again declared the new presumptive diagnosis, and recorded if management had been changed. At 6-week follow-up, an independent urogynaecologist reviewed each case to evaluate the contribution of cystoscopy and biopsy to diagnosis and management, and to assess the rate of complications.

A change in management was judged to have occurred when the eventual management differed from the preferred pre-cystoscopy management plan. Diagnostic value was divided into four, mutually exclusive, grades, shown in Figure 1.

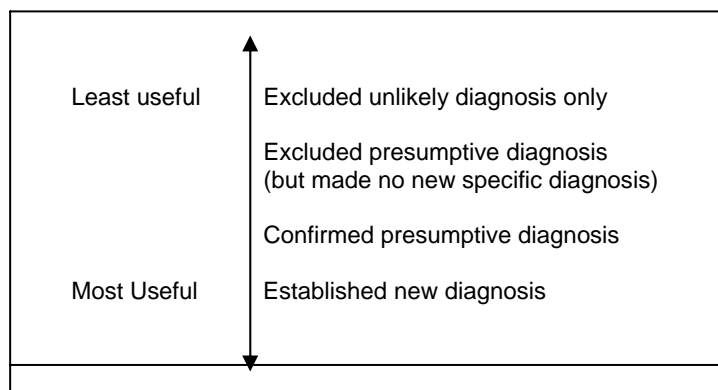


Figure 1: Grades of diagnostic value

### Results

The 60 women ranged in age between 25 and 104, with a median of 47. 34 (56.6%) were being investigated for recurrent UTI, 10 (16.6%) for bladder pain, and 16 (26.6%) for OAB symptoms. 68.3% had already had urodynamics performed as part of the diagnostic work up.

The cystoscopic appearance was entirely normal in 29 cases (48.3%). The range of histological findings is described in Table 1. Overall 30.0% of biopsies made a positive diagnosis. There were no cases of carcinoma, or carcinoma in situ identified. There was concordance between cystoscopic appearance and biopsy histology in 70.0% of cases. However excluding the cases in which both cystoscopy and histology were normal, left a 42.5% concordance rate.

Normal	16 (26.6%)
Mild non-specific cystitis	26 (43.3%)
Chronic cystitis	7 (11.7%)
Cystitis cystica	3 (5.0%)
Raised mast cell count	5 (8.3%)
Follicular cystitis	2 (3.3%)
Acute polypoid cystitis	1 (1.6%)

Table 1: Histological findings

The diagnosis was changed after cystoscopy and biopsy in 17 cases (28.3%). Cystoscopy and biopsy contributed almost equally. In the remaining 43 cases, the procedure either confirmed the suspected diagnosis, or contributed by excluding other less likely diagnoses. The data regarding diagnostic value are summarised in Table 2.

	Excluded Unlikely Diagnosis	Excluded Presumptive Diagnosis	Confirmed Presumptive Diagnosis	Established New Diagnosis
Cystoscopy	31 (51.6%)	5 (8.3%)	19 (31.7%)	5 (8.3%)
Biopsy	36 (60.0%)	6 (10.0%)	11 (18.3%)	7 (11.6%)
Combined	28 (46.6%)	6 (10.0%)	15 (25.0%)	11 (18.3%)

Table 2: Contribution to diagnosis

Performing cystoscopy and bladder biopsy changed the management in 12 cases (20.0%). In a single case the cystoscopy was both diagnostic and therapeutic, because a foreign body was retrieved, relieving storage symptoms. There were 3 complications noted. 2 women were admitted postoperatively with frank haematuria, and discharged the next day. One woman developed a postoperative UTI. This gives an overall complication rate of 5.0%.

#### Interpretation of results

The diagnostic yield was 43.3%. 11 cases (18.3%) had a new unsuspected diagnosis established, gaining the maximum diagnostic value. Of lesser value is an investigation that confirms the presumptive diagnosis, since empirical management would still have been correct. This occurred in 15 cases (25.0%). Excluding a presumptive diagnosis also helped some patients to avoid unnecessary treatment.

To be of actual benefit to the patient an investigation must not only alter the diagnosis, but also the management. Although 80% of patients did not gain such benefit, this should be contrasted against the low rate of complications, and small but important possibility of discovering a malignant lesion(3).

#### Concluding message

Cystoscopy and bladder biopsy should be reconsidered as an essential part of the investigation of recurrent UTI, bladder pain, and OAB symptoms. Together they have a high diagnostic yield, and influence the management in a substantial proportion of female patients.

1. 3<sup>rd</sup> International Consultation on Incontinence, Monaco, June 2004, 764-766
2. Urology 2001;57(6):1068-72
3. Urology 2001;58(4):544-6

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**CLINICAL TRIAL REGISTRATION:** This clinical trial has not yet been registered in a public clinical trials registry.

**HUMAN SUBJECTS:** This study was approved by the King's College Hospital Research Ethics Committee and followed the Declaration of Helsinki Informed consent was obtained from the patients.