The Investigation of Haematuria in the Young Military Population

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SUMMARY: The presentation of haematuria in the otherwise fit young adult is common in military practice. Controversy still exists as to how fully such patients should be investigated. The findings in 90 military patients under 40 are reported and a scheme to rationalise the investigation of haematuria is put forward.

Introduction

Haematuria (gross or microscopic) as the presenting symptom or sign in the young adult continues to be a problem in investigation decision-making. Many studies emphasise the necessity of full investigation of even the minimum number of red cells seen on microscopy of the urine^{1,2,3}. However, as the more sophisticated examinations are both expensive and invasive, with complications of their own, the very few positive results obtained in individuals can hardly justify blanket application to all⁴.

In the Army the patient who presents with gross haematuria or who is found to have microscopic haematuria on routine examination is referred to physician, surgeon or urologist. The result has been in some cases incomplete investigation which misses a serious condition or conversely exhaustive tests which bring no positive results.

A study has been carried out of the patients under 40 years of age presenting with haematuria to the Army Urology Unit in the years 1980, 1981 and 1982. A flow chart of investigation is recommended.

Patients and Methods

The case notes of all those patients under 40 years of age who have presented to the Army urologists at the Queen Elizabeth Military Hospital Woolwich and the Cambridge Military Hospital Aldershot in the three years 1980 to 1982 with the sole symptom or sign of haematuria have been studied.

Results

Ninety such patients are fully documented with an age range of 8 to 40. Table I shows the relevant findings in these patients. In Table II the details of the 11 positive intravenous urograms (IVU) are listed and in Table III those of 19 positive cystoscopies. It should be pointed out that in addition to these two investigations the patients had the following performed: full blood count and ESR, urea and electrolytes, serum creatinine and

three early morning urines for acid fast bacillus exclusion. These were without exception normal. Selection for renal biopsy was made on the advice of the nephrologist at St Thomas' Hospital or at the Institute of Urology. It must be emphasised that other cases

Table I
Findings in Patients age 8 to 40

Number of patients	90
Age range	8-40
Gross: microscopic haematuria	64:26 (71%:29%)
Exercise related	19 (21%)
Known smoker	32 (35%)
Positive physical findings	18 (20%)
RBC's on microscopy on hospital MSU	54 (60%)
IVU performed	83 (90%)
Positive IVU	11 (13%)
Cystoscopy performed	75 (83%)
Positive cystoscopy	19 (25%)
Renal biopsy performed	5
Positive renal biopsy	4
Final Positive Diagnosis	51 (57%)

Table II
IVU Positive Findings - II

*Stone at UO
*Retrocaval ureter
Dilated calyx on left
*Right hydronephrosis
Lateral displacement of kidney
Partial crossed renal ectopia
Distensible pelvis on right
*Stone in lower left calyx
*Stone in upper ureter
*Trabeculated bladder
Bifid right ureter

*Likely cause of haematuria.

Flow Chart for the Investigation of Haematuria

haematuria during this period will have been investigated and treated by our physician colleagues without referral to a urologist.

Table IV gives the positive final diagnoses.

Table III
Cytoscopy Positive Findings – 19

Bladder ecchymosis x 2
Non-specific cystitis x 4
Abrasion at PS junction (? self-induced)
Tight urethra x 2
Urethritis
Nodular prostrate
Prostatic inflammation
Bladder neck polyp
Bladder neck hypertrophy
Bladder neck bleeding
TCC within bladder neck
'Worm' clots in bladder
Blood from LUO
Stone at LUO

Table IV
Positive Final Diagnosis – 51

Urinary stones (Kidney/ureter)	4
'Nephropathy' (IgA, Post-streptococcal, Glandular fever)	7
GU trauma in past	3
Lower tract inflammation (Cystitis, urethritis, prostatitis)	14
Minor trauma	9
Pure exercise induced	8
B-thalassaemia trait (Negro)	1
Crossed renal ectopia	1
TCC (Pis) of bladder	1
Bladder neck stenosis	2
Loin pain/haematuria syndrome	1

Discussion

There is no doubt that haematuria can be the first sign of a potentially life-threatening disease of the urinary tract⁷. Previous series^{1,3,5} suggest that the under-40 age group is considerably less at risk in this regard. The present study bears this out. However, investigation of the patient must be thorough enough reasonably to exclude serious pathology. In the Service this is not only

important for the health of the patient but also for decisions on future employability.

The majority of the young people in this series, having been referred to a urologist, had the basic investigations of MSU, blood count, serum biochemistry, IVU and cystoscopy. Nine were subsequently referred for consideration of renal biopsy after full 'nephropathy' screening, five biopsies being performed. Only 57% of the patients have a positive diagnosis (only five with a condition of any importance) even after such an investigation policy which includes an expensive X-ray series and a general anaesthetic.

The time has come for a generally agreed standard investigation procedure for all cases of 'isolated haematuria' in the Service, which can be followed by primary-care doctor, physician and surgeon. Such a procedure should cover all reasonable possibilities, but prevent the involvement of invasive, expensive or time-consuming examinations where these can reasonably be expected to be non-contributory.

Confidence has been expressed⁶ in the reliability of phase-contrast microscopy in separating 'glomerular' from 'collecting system' bleeding. We consider however that the results do not yet justify basing investigation decisions entirely on phase-contrast findings⁷.

After discussion with all relevant authorities a standard investigation flow-chart⁸ as set out in the Figure is recommended for general adoption by the Army Medical Services.

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