

escaped the committee—namely, the appointment of medical epidemiologists, appropriately trained and with adequate support staff, to take local responsibility for the ascertainment, prevention, and control of all disease whether infectious or not. This task is important enough for them not to be encumbered by administrative or other duties. The timely setting up by the Secretary of State of an inquiry into the future development of the public health functions under the chairmanship of the Chief Medical Officer, Dr Donald

Acheson, will no doubt consider this need—and, we hope, begin a revival of British public health.

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## Asymptomatic microscopical haematuria

As the number of routine medical examinations increases more asymptomatic abnormalities are being detected in patients of all ages. One such abnormality—finding microscopical haematuria on urine stick testing—is of importance to urologists and renal physicians. A paper at p 681 reports that almost two fifths of patients with asymptomatic microscopical haematuria seem not to have been investigated further by their general practitioners. Is there any evidence that ignoring positive results is harmful, or are proprietary stick tests simply too sensitive?

Certainly urine stick tests are very sensitive: they detect as few as  $5 \times 10^6$  red cells per litre of urine (manufacturers' data). Clinicians have tended to ignore a positive stick test result when urine microscopy has failed to confirm the presence of red cells. Yet microscopy (as performed in some laboratories) may be an insensitive indicator of red cells in the urine.<sup>1</sup> For reliable results the urine should be centrifuged and the spun deposit resuspended before microscopy. In normal circumstances a red cell count of more than  $100 \times 10^6/l$  in centrifuged urine is taken as abnormal.<sup>2</sup> If these strict conditions are applied the results of stick testing and microscopy usually agree, and where there is a discrepancy it is probably safer to disregard the stick test findings.<sup>3</sup> The most important feature of microscopical haematuria for urologists, however, is that its degree is a poor guide to the seriousness of any underlying lesion.

What, then, are the implications of microscopical haematuria? In patients aged over 40 the finding should always be taken seriously. Full investigation by urine culture and cytology, intravenous urography, and cystoscopy is mandatory after exclusion of a local genital cause for the bleeding. At least a fifth of cases investigated have a substantial urological abnormality, and in half of these the lesion is malignant.<sup>4</sup> Of those patients who have no detectable abnormality, 2% develop a lesion within the next three years.<sup>5</sup> Concurrent treatment with anticoagulants should never be blamed for microscopical haematuria since many patients who develop haematuria while taking warfarin have urological disease.<sup>6</sup> Similarly, prostatic bleeding should always be diagnosed by exclusion of other disorders. When no firm cause for the bleeding can be established a follow up protocol should be instituted continuing for a minimum of three years. The recommendation that finds general favour with urologists is to repeat analysis of the urine and cytology every six months, with repeat cystoscopy and urography at yearly intervals if bleeding continues.<sup>4</sup>

In patients under 40 full investigation is also indicated, although only 2% will prove to have a serious urological lesion.<sup>3</sup> In a few young patients transient haematuria will be due to athletic activities such as jogging, rowing, or karate.<sup>7</sup> Such microscopical haematuria usually lasts less than 48

hours<sup>8</sup> but may on occasion persist,<sup>9</sup> in which case full investigation is needed. In most young patients, however, no firm diagnosis can be established, and the condition is traditionally termed "benign" (or essential) haematuria. Some of these patients have glomerulonephritis—though in the absence of proteinuria, cylindruria, and hypertension the prognosis is good and diagnostic renal biopsy is not indicated. The full investigation of young patients (which should always be done<sup>10</sup>) need not include cystoscopy unless specifically indicated: malignancy is extremely rare in this age group even after protracted follow up.<sup>11</sup>

Routine urine testing is rarely performed in infants and children so the problem does not often arise. The most common causes for microscopical haematuria in children are glomerulonephritis,<sup>12</sup> sickle cell disease,<sup>13</sup> and urinary tract infection, with most of the remainder being termed "benign." Investigation, therefore, should be aimed at excluding renal disease: particular attention should be paid to the presence of white cells, casts, and protein in the urine. Finding these warrants referral to a paediatrician or nephrologist. Cystoscopy is seldom indicated in children.

When a definite cause for microscopical haematuria is found in older patients urological referral is mandatory. Early investigation, diagnosis, and treatment of bladder cancer, from which half will be found to suffer, is beneficial.<sup>14,15</sup> In those patients in whom no abnormality is detected careful follow up with repeated investigations is essential, as explained above. Younger patients, however, can probably be given a clean bill of health after three years provided there is no evidence of renal parenchymal disease or hypertension.

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