Recurrent macroscopic haematuria due to bladder blood vessels after exercise induced haematuria

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CASE REPORT

A previously healthy 58 year old white man consulted the clinic in June 2001 because of exercise related macroscopic haematuria that occurred immediately after a one hour jog. He had taken part in a 10 km competition annually for 15 years each September and had been training throughout the year.

The gross haematuria lasted 12 hours. Cystoscopy was conducted next day. Some small adherent clots were seen on the posterior wall of the bladder and these were biopsied. The histology was normal. The cystoscopy showed mild prostatic occlusive disease, with large vessels on the middle lobe of the prostate and many crossing but normal vessels in the posterior wall of the bladder. There was no haemorrhagic telangiectasis. Endoscopically the bladder and anterior urethra were normal.

Renal ultrasonography, abdominal ultrasonography of the prostate, and excretory urography all showed normal results. The prostate volume was about 25 ml.

Full blood count, prothrombin time, partial thromboplastin time, a platelet count, bleeding time, creatinine concentration, and prostate specific antigen (PSA) were measured, and were normal. Urine samples were sent for cytology. No malignant cells were detected. The blood pressure of the patient was normal (115/80 mm Hg). He had been taking 100 mg aspirin a day for a year. This treatment was stopped. The patient finished taking finasteride one month later. Since then, the urine has been examined for red blood cells on several occasions and found to be normal. The patient began running again in May 2002, and took part in the annual 10 km competition in September 2002, with no recurrence of haematuria.

DISCUSSION

In this case, the gross haematuria started after strenuous exercise. Typically, it began after a one hour run, and recurred after one month after a 10 km run. Later it occurred repeatedly during normal daily activity.

Recurrent haematuria is a well documented symptom of benign prostatic hyperplasia. In a large retrospective study of patients who underwent transurethral prostatic resection, haematuria was an indication for surgery in 12%. Although the reason for bleeding with benign prostatic hyperplasia is not fully understood, it is probably related to increased vascularity in the prostate.

According to Foley et al., haematuria due to benign prostatic hyperplasia is effectively suppressed by finasteride, a 5α-reductase inhibitor that prevents the conversion of testosterone into dihydrotestosterone. In that study, the finasteride group (5 mg/day) were treated for 12 months, and haematuria resolved within four weeks in all the patients. Further studies have confirmed its effect in limiting haematuria.

In this case, the patient took 5 mg finasteride a day, but the recurrent gross haematuria persisted. After four months, the suburethral prostatic vessels were electrocoagulated. As the haematuria persisted, the origin had to be something other than the prostate. The problem did not disappear until the crossing but otherwise normal vessels found on the posterior wall of the bladder were electrocoagulated.

We searched Medline from 1966 to July 2003 (keywords: haematuria and bladder and exercise) and found seven relevant articles. In another Medline search from 1966 to July 2003 (keywords: haematuria and exercise), no relevant articles were found.
2003 (keywords: haematuria and bladder and vessels) we found 20 articles. However, no similar cases were described. Only in a review article by Abarbanel et al.11 was it mentioned that one reason for sport related haematuria can be a bladder injury caused by the repeated impact of the posterior bladder wall against the bladder base, which can cause vascular lesions and haematuria.

In this study, the patient took 100 mg aspirin a day before the first gross haematuria. According to the literature, the use of non-steroidal anti-inflammatory drugs such as aspirin can induce haematuria.12 However, in a later study on dipstick haematuria, no association was found between the presence of haematuria and intake of non-steroidal anti-inflammatory drugs.13 The use of aspirin in this case was not the reason for the haematuria, because the symptoms continued after the medication was stopped.

In our case, the first and second macroscopic haematuria period were exercise induced. According to the literature there are several reasons for sport related haematuria: foot strike haemolysis, renal ischaemia, hypoxic damage of the kidney, the release of a haemolysing factor in the bladder, renal trauma, dehydration, increased circulation rate, myoglobinuria, the peroxidation of red blood cells, and nutcracker syndrome.14 15 Some studies have indicated that exercise associated haematuria resolves in 24–48 hours.1 In injury caused by the repeated impact of the posterior bladder wall there is one reason for sport related haematuria: foot strike haemolysis.12 However, in a later study on dipstick haematuria, no association was found between the presence of haematuria and intake of non-steroidal anti-inflammatory drugs.13 The use of aspirin in this case was not the reason for the haematuria, because the symptoms continued after the medication was stopped.

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