

BLOOD IN URINE:

A WARNING Sign That You SHOULD NOT IGNORE!

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“Peter, a 57 years old executive chef went to the toilet one night and noticed that his urine was red in colour. The urine cleared up the next morning but Peter was very worried. He visited his family doctor who sent his urine for tests and found the presence of red blood cells. His family doctor referred him a Urologist. After some investigations, Peter was found to have early stage kidney cancer. Peter underwent appropriate treatment and is now cured.”

Seeing blood in your urine is a frightening experience for most people. When this occurs, it must be fully investigated by a doctor. Although in many patients no specific cause can be found, blood in urine – medically referred to as haematuria – can be an indication of a serious problem of the urinary system (*Diagram 1*) and is a warning sign that you should never ignore.

It is estimated that up to 20% of the population is at risk of haematuria. There are two types of haematuria. The first is called “gross” or “macroscopic” haematuria where the blood in the urine is visible to the naked eye. Macroscopic haematuria can vary widely in colour, from light pink to bright red with clots. It can result from as little as 1ml of blood in 1litre of urine, and therefore the colour does not reflect the degree of blood loss.

If the blood can only be detected with laboratory testing of urine, it is called “microscopic haematuria”. People with microscopic haematuria are often unaware of the problem and it will most commonly be detected from urine tests during a routine medical check-up.

Although the amount of blood in the urine may vary, the causes of gross and microscopic haematuria are the same. So, any degree of blood in the urine should be fully evaluated by a doctor, even if it resolves spontaneously.

Is there definitely blood in the urine?

Before you read on, it is worth considering whether you have recently eaten beetroot, red dragon fruits or food with colourings as these can make the urine to turn pink and cause unnecessary alarm. Certain medications and antibiotics such as nitrofurantoin and rifampicin can also turn urine brown or red. Check that the blood in the urine is not from the rectum/anus and in females, blood from the vagina should be ruled out.

What are the causes of blood in urine?

The cause of haematuria, whether microscopic or macroscopic are similar and may result from bleeding anywhere along the urinary tract (*Diagram 1*). 50% of patients with visible blood in the urine will have an underlying cause identified but with non-visible blood in the urine, only 10% will have a cause identified.

Risk factors for significant underlying diseases include: age over 40, smoking, exposure to certain chemicals, history of radiation, overuse of painkillers, history of diabetes and hypertension.

Common causes of blood in the urine include:

1. Infection of the bladder (cystitis) or kidneys (pyelonephritis). This usually causes pain when you pass urine and pain over lower part of abdomen and loin area. Fever can occur in severe infection.
2. Kidney, ureteric or bladder stones which may be painless and may present as only haematuria.

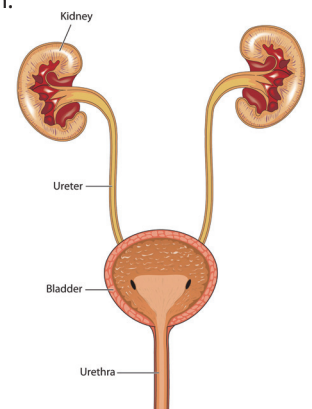


Diagram 1



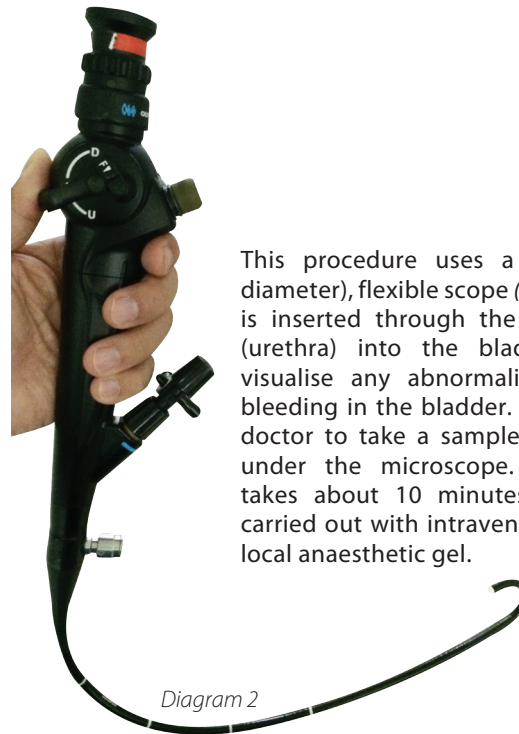
3. An enlarged prostate. This commonly occurs in older male and associated with symptoms of difficulty passing urine, slow urinary stream and frequency of urine.
4. Kidney cancer. This is an uncommon cancer and may present as microscopic or gross haematuria. The gross haematuria may be intermittent. If it is detected early, the chance of cure is very high.
5. Bladder cancer. Again this usually occurs in people aged over 50. Usually the patient is a heavy smoker. As in kidney cancer, if found early and treated, the cure rate is very high.
6. Kidney disease can also cause haematuria. It is a common cause of microscopic haematuria in younger people. Most of the time, protein will also be detected in the urine.
7. Medications that thin the blood like warfarin and clopidogrel (Plavix) can also cause bleeding in the urinary tract.

How is blood in urine diagnosed?

After taking a detailed history and carrying out physical examination, the Urologist will order a urine test which consists of testing the urine with a chemical test strip and examining it under a microscope. This is to confirm the presence of red blood cells. If three or more red blood cells are seen per high power field in the urine specimens on microscope, referral to a specialist, either an Urologist or Nephrologist for further evaluation is recommended.

Usually the specialist will repeat the urine test and also obtain a culture of the urine to identify the presence of bacteria. Blood tests will be carried out to assess kidney function and identify any blood clotting abnormalities. Further investigations will be ordered depend on the findings of the urine and blood tests. If necessary, two additional tests, imaging and cystoscopy will be performed.

Nowadays, CT scan is preferred to intravenous urogram (IVU) as it gives a better, more detailed image of the kidneys and ureters. It is also the best method to detect urinary stones. However, CT scan cannot visualise the lining of the bladder clearly and therefore, a second examination called a cystoscopy is necessary.



This procedure uses a small (3mm in diameter), flexible scope (*Diagram 2*) which is inserted through the urinary passage (urethra) into the bladder to directly visualise any abnormality or source of bleeding in the bladder. It also allows the doctor to take a sample for examination under the microscope. This procedure takes about 10 minutes and is usually carried out with intravenous sedation and local anaesthetic gel.

Treatment

Treatment depends on the exact cause for the haematuria following a specialist’s evaluation and investigations. In patients where investigations fail to find the source of the bleeding, observation with repeat urine tests is necessary. Investigations like CT scan and cystoscopy may be repeated if haematuria recurs.

Conclusion

Any degree of blood whether macroscopic or microscopic in the urine, especially for those aged 40 or above should be fully investigated by a Specialist as it might be a sign of serious disease of the urinary system. *EZ*

