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HEMATURIA - IN THE MALE PATIENT

THE PROBLEM

Hematuria: from **Hemat** = blood and **uria** = of urine

Hematuria simply means blood in the urine. Microscopic hematuria means that the blood is only seen when the urine is examined under a microscope. Gross hematuria, on the other hand, means that there is enough blood in the urine so that the change can be appreciated with the naked eye. Obviously, gross hematuria has more blood in the urine than microscopic hematuria, but the types of diagnoses that can cause the problem are the same and the work-up or evaluation that is needed is identical.

ANATOMY

To understand the needed evaluation for hematuria, one must know the anatomy of the urinary tract in the male. A diagram of the urinary tract may be provided so that the explanation makes better sense. The kidneys function to make urine by filtering the blood and discarding into the urine the waste products that are no longer needed. Water and salts accompany these waste products by necessity. The urine is then transported through two narrow tubes, called ureters, to the bladder, which is the reservoir for urine in between each void. The urine exits the bladder through a channel called the urethra that first passes through the prostate and then through the penis to the outside.

The blood in the urine must come from **one** of the above places: kidneys, ureters, bladder, prostate, or urethra. The evaluation requires that we look at the **ENTIRE** urinary tract in patients with hematuria.

CAUSES

The number of causes of hematuria is great -- perhaps 20 or 25 different groups of causes.

Some are much more serious than others and require diagnosis sooner than later. These groups include cancers or malignancies, stones, infections, and blockages or obstructions to flow.

In the case of cancers, one must be concerned with every organ in the urinary tract, thus the reason to look at the entire urinary tract. Of the other groups, many are less important and most require no treatment. These may include viral infections, non-specific inflammations of the kidney such as drug reactions (non-steroidal anti-inflammatory drugs, such as ibuprofen can cause non-specific inflammation, usually without harm). Many medications can cause blood in the urine, particularly medications which thin the blood's clotting ability, like coumadin or aspirin.

EVALUATION

The evaluation consists of taking a history and doing a physical exam of the individual and an analysis of the urine under a microscope. Many questions about one's urinary tract, including urination habits, stone disease, infections and injuries, will be asked. In addition, we will ask about recent illnesses, family history, drugs used in the recent past, prior operations, social habits such as drinking and smoking, and work related exposures. Regardless of the information generated, we will almost always

continue with the diagnostic tests to look at the entire urinary tract. Even if something from the history is suspected, we must try to prove that nothing potentially harmful is also present.

There are usually two diagnostic tests necessary to give us a look at the entire urinary tract. The intravenous pyelogram (IVP) and cystoscopy.

INTRAVENOUS PYELOGRAM (IVP)

The intravenous pyelogram or IVP is a special x-ray of the urinary tract. A series of x-rays are taken before and after a special colorless dye is injected into the veins. The dye, which contains iodine, fills the urinary system and multiple films are taken over a 30-minute period looking for abnormalities. A pressure balloon may be placed on your stomach to help fill out the system better. At the end of the procedure the x-ray technician will ask you to empty your bladder in the bathroom and then one last x-ray film will be taken.

Because a dye is injected, the possibility of an allergic reaction is present. A physician is in attendance and will administer the proper therapy if needed. If you have had a previous reaction to intravenous dye or are sensitive to shellfish, tell your doctor before the test. You are also exposed to very small amounts of radiation.

You will be given a prep sheet to describe the proper preparation for the IVP. Laxatives usually will be taken the night before the IVP and some fluid restrictions will occur the morning of the test.

CYSTOSCOPY

Cystoscopy is a procedure that is used to visually inspect the bladder and the urethra (tube leading out of the bladder). This can be done in most instances without discomfort by the use of a local anesthetic jelly (not a shot). The cystoscope or telescope, which is narrower than the urethra, is passed into the bladder and the inspection is carried out. In most instances the telescope used is a flexible fiberoptic instrument that conforms to the shape of the urinary channel. The entire procedure takes less than 10 minutes. Afterwards you might expect a little discomfort with voiding and perhaps a spot of blood for a day or so. A warm bath helps to relieve this irritation and will wash off the soap we've used to prep the area. You may receive antibiotics afterwards to prevent infection.

OTHER TESTS

Other tests that might be needed depending on the findings of the IVP and cystoscopy are ultrasound or CT scan examinations of the urinary tract. These will be done if some question or abnormality is not answered or explained to the urologist's satisfaction. Other tests, such as special blood studies, are considered if some historical fact about you raises other possibilities.

In the end, we hope to find nothing seriously wrong with the urinary tract. In fact, the most common finding is that we cannot determine a cause of the bleeding. This is actually a good finding because it suggests that the cause is not something that will ever be harmful. Remember that the thrust of the work-up is to exclude harmful diagnoses such as cancers or stones. Many of the other diagnoses include inflammations of the kidneys (nephritis) and would require a kidney biopsy to make a diagnosis. If one's urinary function is normal and we do not find protein in the urine, then the nephritis is usually harmless. This makes the kidney biopsy more dangerous than the disease, so we elect not to go further in the workup. Simple benign enlargement of the prostate is a very common source of blood in the urine and requires no treatment if no significant blockage is present.

FOLLOW-UP

If we find no cause for the hematuria, you will be referred back to your primary physician for follow-up.

He or she will probably want to check your urine every year for a while to make certain that no changes are occurring. A blood test to check kidney function and a blood pressure check should be done as well, but then all of these tests are usually done regularly. Men over 50 should have a yearly PSA or Prostate Specific Antigen to screen for prostate cancer.

If the amount of hematuria continues without change and no other symptom arises, the workup need not be repeated.

No discussion of treatment has been offered here. There are too many diagnoses that can account for hematuria to cover them all. Once the workup is completed, we will be able to give you a better idea of the exact causes and treatments, if any, are needed.

If you have any questions about hematuria or any other related urinary problem, please don't hesitate to ask.