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Clinical Emergencies in Genitourinary Cancers

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Profuse Hematuria

Painful or painless hematuria is an important symptom in genitourinary malignancy and warrants thorough evaluation. It is unusual for gross hematuria to present as an acute emergency unless it is associated with other symptoms such as loin pain or urinary retention.

Causes

Upper Urinary Tract

• Transitional cell carcinoma (renal pelvis, ureter)
• Renal cell carcinoma
• Metastatic tumors in the kidney
• Retroperitoneal tumors (testis, lymphoma, sarcoma)
• Iatrogenic: percutaneous surgery/nephrostomy

Lower Urinary Tract

• Transitional cell carcinoma of bladder
• Pelvic cancer: cervix, rectum (with fistula to bladder), and prostate
• Iatrogenic [radiation cystitis, cyclophosphamide cystitis, postoperative, e.g., transurethral resection of prostate (TURP) or bladder tumor (TURBT)]

Clinical Presentation

Patients who present with hematuria may have associated lower urinary tract symptoms (frequency, urgency, dysuria) or clot retention.

In upper tract bleeding patients may present with ureteric colic/loin pain due to blood clots in the ureter. Unusually a patient may present with shock secondary to excessive loss of blood or associated sepsis.
Investigations

These have been described in detail in Chapter 3. Baseline investigations include full blood count, coagulation screen, electrolytes, urea, and creatinine. A midstream urine (MSU) sample is sent to the laboratory to rule out infection. When the diagnosis is not known, urine cytology is an useful investigation. Imaging should include ultrasound or computed tomography (CT) scan of the upper urinary tract, and rigid cystoscopy to evaluate the bladder and urethra.

Management

Fluid Resuscitation

Accurate assessment of hemodynamic status is the key to management of patients with profuse hematuria. Intravenous fluids and blood transfusion should take into account the age of the patient, site of bleeding, degree of anemia, hemodynamic stability, and presence of coexisting cardiac, pulmonary, or vascular conditions.

Transfusing one unit of red cells increases the hemoglobin by approximately 1 g/dL and the hematocrit by 2% to 3% in the average 70 kg adult. Adequate oxygen-carrying capacity can be met by a hemoglobin of 7 g/dL (a hematocrit value of approximately 21%) or even less when the intravascular volume is adequate for perfusion.

Catheter Irrigation

A three-way irrigation catheter [size 22 French (F)] is placed and continuous bladder irrigation is set up if the patient is in clot retention.

Rigid cystoscopy and bladder lavage to evacuate clots may be necessary after the patient’s condition is stabilized. This will also help in the diagnosis of the cause of the bleeding.

Hemorrhagic Cystitis

This condition is seen in patients who had pelvic irradiation or systemic treatment with oxazaphosphorine alkylating agents (cyclophosphamide) and warrants special mention. In a series of 1784 patients treated with radiotherapy for carcinoma of the cervix, the incidence of hemorrhagic cystitis was 6.5% and the median interval before bleeding occurred was 35.5 months (1). Management is based on the severity of hematuria, the treatment facilities available, the risks and severity of complications, as well as the prognosis of the patient.

Placement of a large catheter (usually 20–22F three-way irrigation catheter) to allow bladder irrigation is the basic management in all patients. Periodic evacuation of clots is necessary in most cases. Coagulation defects if present should be corrected.