Case35 Print

Location: Office

Vital signs:
Temperature is 36.7 C (98 F), blood pressure is 162/94 mmHg, pulse is 78/min, and respirations are 14/min.

CC: A 35-year-old African-American male came for routine exam.

HPI:
A 35-year-old African-American man comes to the physician's office for a routine health maintenance examination. He complains of weakness and anorexia for the past few weeks. His review of systems is positive only for flank discomfort. He has no other medical problems. The patient is a postal worker. He does not drink alcohol and has smoked one pack of cigarettes daily for 15 years. His father died at the age of 45 from kidney disease. He takes no medication and has no other complaints.

How do you approach this patient?
We have a 35-year-old male with weakness, anorexia, and flank discomfort. His family history is positive for kidney disease.

Perform physical exam:
General
HEENT/Neck
Lungs
Heart
Abdomen
Extremities

Here are the results of the exam:
Examination is significant for bilateral palpable cystic kidneys. Clear lung fields and normal first and second heart sounds are noted. No ankle or periorbital edema is noted. Rest is unremarkable.

Discussion:
Based on his presentation and the presence of bilaterally enlarged cystic kidneys, it is most likely an autosomal-dominant, polycystic kidney disease (ADPKD). Other causes such as congenital simple cysts, medullary cystic kidney disease, and acquired cystic kidney disease should be considered in the DD.

Order:
CBC with differential, stat
BMP, stat
UA, stat
Ultrasound kidneys, stat

Results of your tests:
The UA showed many RBC (50+), negative nitrite, negative esterase, no bacteria, and few white cells. No casts are seen.
CBC showed Hb of 9.0 g/dL, MCV 88 fl, WBC of 6,000/cmm and platelets of 230,000/cmm.
BMP

Serum Na	135 mEq/L
Serum K	6.8 mEq/L
Bicarbonate	17 mEq/L
BUN	76mg/dL
Serum Creatinine	6.4mg/dL
Calcium	8.0 mg/dL
Blood Glucose	118 mg/dL

Ultrasound of the kidneys shows bilateral polycystic kidneys.

Discussion:
This patient has evidence of renal failure (most likely chronic) with resulting metabolic acidosis, hyperkalemia, hypocalcemia, and anemia of chronic disease. This patient needs to be admitted in the hospital to manage his acidosis, hyperkalemia, and for long-term dialysis by a nephrologist. Once you see hyperkalemia of this degree, an EKG should be obtained; and, if there are any EKG changes (peaked T waves), calcium gluconate should be given to stabilize the membrane. Insulin and dextrose is useful in the acute setting for rapid correction. Sodium bicarbonate is useful to correct both acidosis and hyperkalemia. Kayexalate is the only medication, which removes the potassium from the body. Once these treatments are given, the potassium level should be rechecked in 2-4 hours; and, if it is still high, medical treatment should be repeated. If it is still high after the second round of treatment, dialysis is indicated.

Once the patient is out of danger, other evaluation should be continued. Serum phosphorus level should be checked and PhosLo (calcium acetate - binds phosphorus and prevents absorption) is recommended if it is elevated. Iron deficiency is also commonly associated with chronic renal failure; so, this should be ruled out with iron studies. Anemia of chronic disease with an Hb of <10 is an indication to start erythropoietin. Blood pressure should be controlled with either ACE inhibitors (if the Cr is less than 2-2.5) or calcium channel blockers (if the Cr is very high). A renal diet, which has low potassium, low protein, and low phosphorus, should be ordered.

If there is no family history of brain aneurysms, routine screening for brain aneurysms is not indicated.

Order:
EKG, 12 lead, stat

Results:
EKG shows peaked T waves.

Order:
Calcium gluconate IV, bolus
D50 and insulin, stat, IV, bolus
Sodium bicarbonate, oral, continuous
Kayexalate, oral, continuous

Now, change the location of the patient to ward:
Vitals: Q 6 hours
Diet: renal
Cardiac monitor: routine
Urine output: routine
Activity - Out of bed to chair
Nephrology consult, stat (Reason: 35-year-old male with renal failure secondary to ADPKD with resulting acidosis and hyperkalemia)
Check serum potassium 2-4 hours later
BMP: every 12 hours
Phosphorus, serum, stat
Serum iron, ferritin, and TIBC: routine
Amlodipine, oral: continuous

Results:
Phosphorus is high.
Fe studies indicate anemia of chronic disease.

Order:
Calcium acetate, oral, continuous
Erythropoietin, subcutaneous, routine

Finally counseling:
Counsel patient, smoking cessation, routine
Counsel patient, no illegal drug use, routine
Counsel patient, exercise program, routine
Counsel patient, medication compliance, routine

Final diagnosis:
Adult autosomal-dominant, polycystic kidney disease (ADPKD) resulting in renal failure.

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