Case Studies: Renal and Urologic Impairments
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Normal lab values for cases:

BUN: Female, ages 0-50 7-22 mg/dl (2.5-7.9 mmol/L)
     Female, age 51+ 9-26 mg/dl (3.2-9.3 mmol/L)
     Male, ages 0-50 9-25 mg/dl (3.2-8.9 mmol/L)
     Male, age 51+ 9-27 mg/dl (3.2-9.6 mmol/L)

Creatinine: Female, all ages 0.6-1.3 mg/dl (53-115 umol/L)
     Male, all ages 0.7-1.5 mg/dl (62-133 umol/L)

U Creatinine: All 27-260 mg/dl (2.4-23 mmol/L)
U Protein: All 0-30 mg/dl (0-300 mg/L)
U Microalbumin: All 0-3 mg/dl (0-30 mg/L)
Protein/Creatinine ratio: All <0.2 mg/mg
MA/Creatinine ratio: All <30 mg/G

Case # 1

An underwriter enters your office, hands you a sheet of paper, and asks “What do you think? Can we make an offer?” You look at the paper and see it’s lab results on a 60 year male looking for $500,000 of Term Life insurance.

Blood Urea Nitrogen (BUN) 22 mg/dL (7.85 mmol/L)
Creatinine 0.8 mg/dL (70.7 umol/L)

All the rest of the chemistries are normal.

Urinalysis

Heme moderate
RBC = 25 per HPF
WBC = 0 per HPF
Protein/Creatinine ratio = 0.03
Cotinine Heavy
Discussion Questions:

1) Are there any clues from this history that suggest a particular diagnosis?

2) What are the most common causes of microscopic hematuria?

Case # 1 (continued)

The applicant goes to his physician for evaluation. He is asymptomatic and complete physical exam including blood pressure reading is normal. A repeat urinalysis confirms microscopic hematuria with 50 RBCs per HPF. Urine culture is negative. He is referred to Urology.

Discussion Questions, cont:

3) What is the appropriate work-up for unexplained persistent hematuria?
Case # 1 (continued)

A cystoscopy done in the urologist’s office reveals a single small 1 cm papillary lesion. He is scheduled for TURBT (transurethral resection of bladder tumor). Pathology from his TURBT reveals low grade transitional cell carcinoma of the bladder with no invasion of the submucosa or lamina propria. There is no muscular propria present in the specimen.

Discussion Questions:

4) What is the stage of his bladder cancer?

5) Is there any significance with the lack of muscular propria in the specimen?

6) Is he considered “high-risk” or “low-risk” for disease recurrence?

7) How would his risk change if there were multiple papillary tumors?

8) What risk factors can he eliminate to decrease his risk of recurrence?

9) What is the appropriate treatment and follow-up?

He remains compliant with routine bladder cancer surveillance recommendations. At year number two, however, a routine surveillance urinary cytology comes back POSITIVE for atypical cells. Repeat cystoscopy is clear without any visualized lesions.

Discussion Questions:

10) What are the next diagnostic steps to rule out recurrent disease?

11) What if the repeat cystoscopy revealed a recurrent papillary tumor? If this was removed by another TURBT and the pathology confirmed a similar non-muscle-invasive bladder tumor, would his prognosis be worse than if this lesion never recurred?
**Case # 2**

In 2009, 45 year old male nonsmoker applied for 1 million term coverage and was declined for laboratory results found during the underwriting process. He denied having medical history and did not have a personal physician. Build: height 6 feet, 0 inches (182.88 cm), weight 210 lbs (95.5 kg), BP 130/82. Laboratory results during underwriting process showed:
- BUN 32 mg/dl (11.68 mmol/L)
- Serum creatinine 1.8 mg/dl (159 umol/L)
- Urine findings: 0 RBC/HPF, 0 WBC/HPF
- Urine protein/creatinine ratio 0.12 mg/mg
- Urine microalbumin 0.3 mg/dl (3.0 mg/L)

*Discussion questions:*

1) *Other than renal failure, what are other causes of elevated serum creatinine?*

2) *What if the applicant is 28 years old and a body builder?*

**Case #2 (continued)**

In 2012, now 48 years old, he applies for 3 million term coverage. Applicant now has a personal physician and also has been evaluated by a nephrologist. Medical records from the nephrologist show these results from May 2012:
- BP 128/84
- BUN 38 mg/dl (13.87 mmol/L)
- Serum creatinine 2.3 mg/dl (203 umol/L)
- eGFR 31 mL/min/1.73 m2
- No evidence of proteinuria

*Discussion questions:*

3) *Describe the different modes of evaluating renal function.*

4) *How should this level of creatinine and eGFR be assessed for mortality?*
Case #3

A 38 year old male nonsmoker applying for 1 million term coverage disclosed history of IgA nephropathy diagnosed by kidney biopsy in 2007. Applicant has these findings from urine specimen submitted during underwriting:

- Urine 4 RBC/HPF, 0 WBC/HPF,
- Urine protein/creatinine 0.28 mg/mg,
- Urine microalbumin 7.2 mg/dl (72.0 mg/L),
- BUN and serum creatinine normal,
- eGFR >60 mL/min/1.73 m2.

Discussion questions:

5) What is the underwriting significance of these laboratory findings?

6) What is the mortality associated with proteinuria in a nondiabetic population?

Case #4

A 67 year old male nonsmoker applying for $25 million of life insurance coverage disclosed a history of renal cell carcinoma treated with surgery 7 years ago. He states he has done well since then without recurrence. Blood pressure and renal function are both normal on insurance exam.

Review of the medical records shows that he presented 7 years ago with an 6 cm right renal mass found incidentally during a CT scan for presumed appendicitis. He underwent laparoscopic radical nephrectomy.

Discussion questions:

1) What is the most common initial presentation for renal cell carcinoma?

2) What are the main prognostic indicators for this cancer?

3) What is his overall mortality prognosis?