



Diabetes Mellitus

micro drip study guide

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Fez
9 yr MN
Labrador Retriever



History

- Weight loss
- Suspect PD
- Unsure if PU
- Appetite is fine

PE

- Generalized sarcopenia
- BCS 3/9
- Subjective hepatomegaly
- Dental disease

Please meet Fez, a nine-year-old neutered male Labrador retriever who's presented to you for weight loss and suspected polydipsia.

The family is unsure if he is concurrently polyuric, but they can tell you that his appetite is just fine. You perform your physical exam and your abnormalities include generalized sarcopenia with a body condition score of three out of nine, subjective hepatomegaly, and obvious dental disease.

Minimum Database

- CBC
 - WBC 11.7 K/uL (unremarkable differential), HCT 44%, PLT 225 K/uL
- CHEM
 - ALB 4.1 g/dL, K+ 3.4 mmol/L, ALT 134 U/L, ALP 143 U/L, BG 521 mg/dL, TRIG 178 mg/dL, TBIL 0.1 mg/dL
- UA
 - USG 1.038, 1+ proteinuria, 3+ glucosuria, negative ketones
- tT4
 - 2.3 ug/dL

Given Fez's history and physical exam abnormalities, you decide, it's time to run some tests. Your minimum database includes a complete blood count, serum biochemical profile, urinalysis and total thyroxine level

His complete blood count identified a white blood cell count of 11.7 with an unremarkable differential, a normal hematocrit of 44%, and a normal platelet count of 225,000 confirmed with a blood smear.

His albumin was normal. His potassium was slightly low at 3.4 mmol/L, his ALT was mildly elevated at 134 U/L. Concurrently, his alkaline phosphatase was similarly mildly elevated at 143 U/L. He did have moderate hyperglycemia, 521 mg/dL, as well as mild hypertriglyceridemia at 178 mg/dL. His urinalysis was relatively unremarkable, excepting 1+ proteinuria and 3+ glucose urea. His total T4 level was normal.

Do We Have a Dx?

- | | |
|------------------------------|--------------|
| • Consistent history? | • Yes |
| • Consistent clinical signs? | • Yes |
| • Fasting hyperglycemia? | • Not fasted |
| • Fasting glucosuria? | • Not fasted |

So, let's take a step back. Do we have a diagnosis of diabetes mellitus for Fez? Well, the first thing that we have to ask ourselves is, is his history and are his clinical signs consistent with this endocrinopathy?

Well, of course the answer is yes. We also need to look at our test results. Obviously, we have some abnormalities, most notably his moderate hyperglycemia with concurrent glucosuria. Before we make a diagnosis of diabetes mellitus however, we need to ensure that these are fasted abnormalities, and unfortunately for these test results, Fez was not fasted for at least 12 hours.

What Do You Do Now?

- Recheck BG & urine glucose after 12 hour fast
- Fructosamine level



So what are your options if you find yourself in this type of scenario? You have a patient with a history and clinical presentation consistent with diabetes mellitus, but they weren't fasted prior to obtaining your minimum database.

Well, you have two major options. You could recheck blood glucose and urine glucose after a 12 hour fast or you could submit a blood sample for a fructosamine level.