##########

```
!pip install unsloth
!pip install --force-reinstall --no-cache-dir --no-deps
git+https://github.com/unslothai/unsloth.git
```

```
from huggingface_hub import login
import getpass

hf_token=getpass.getpass("Enter your Hugging Face token: ")

# Check if the token was entered
if not hf_token:
    raise ValueError("Hugging Face token not entered.")

# Log in using the token
login(hf_token)
```

```
from unsloth import FastLanguageModel

max_seq_length=2048
dtype=None
load_in_4bit=True

model,tokenizer=FastLanguageModel.from_pretrained(
    model_name="unsloth/DeepSeek-R1-Distill-Llama-8B",
    max_seq_length=max_seq_length,
    dtype=dtype,
    load_in_4bit=load_in_4bit,
    token=hf_token,
)

prompt_style="""Below is an instruction that describes a task, paired with
an input that provides further context.
Write a response that appropriately completes the request.
Before answering, think carefully about the question and create a
step-by-step chain of thoughts to ensure a logical and accurate response.

### Instruction:
```

```
You are a medical expert with advanced knowledge in clinical reasoning,
diagnostics, and treatment planning.
Please answer the following medical question.

### Question:
{}

### Response:
<think>{}"""
```

```
question = "A 61-year-old woman with a long history of involuntary urine
loss during activities like coughing or sneezing but no leakage at night
undergoes a gynecological exam and Q-tip test. Based on these findings,
what would cystometry most likely reveal about her residual volume and
detrusor contractions?"
```

```
FastLanguageModel.for_inference(model)
inputs=tokenizer([prompt_style.format(question,
"")],return_tensors="pt").to("cuda") #GPU use koro and then answer the
question but first tokenize

outputs=model.generate(
    input_ids=inputs.input_ids, #tokenized question ta chilo oitake input
neya hocche
    attention_mask=inputs.attention_mask,
    max_new_tokens=1200,
    use_cache=True,
)

response=tokenizer.batch_decode(outputs)
print(response[0].split("Response:")[1]) #only generated answer ta kei
response hishebe dibe rather than other extra stuffs
```

```
train_prompt_style="""Below is an instruction that describes a task,
paired with an input that provides further context.
Write a response that appropriately completes the request.
```

```
Before answering, think carefully about the question and create a
step-by-step chain of thoughts to ensure a logical and accurate response.

### Instruction:
You are a medical expert with advanced knowledge in clinical reasoning,
diagnostics, and treatment planning.
Please answer the following medical question.

### Question:
{}

### Response:
<think>
{}
</think>
{}"""  #COT include ### response include ## questions

EOS_TOKEN=tokenizer.eos_token

def formatting_prompts_func(examples):
    inputs = examples["Question"] #dictionary
    cots = examples["Complex_CoT"] #dic
    outputs = examples["Response"]#dic
    texts = [] #lists
    for input, cot, output in zip(inputs, cots, outputs):
        text = train_prompt_style.format(input, cot, output) + EOS_TOKEN
#first q, first cont, first resp dataset add them to text
        texts.append(text) #texts=list e diye dibo
    return {
        "text": texts,
    }
```

<think>
Okay, so I have this medical question to answer, and I need to think through it carefully. Let me start by breaking down the information given.

The patient is a 61-year-old woman with a history of involuntary urine loss during activities like coughing or sneezing. Importantly, she doesn't leak at night. She undergoes a gynecological exam and Q-tip test. The question is asking what cystometry would most likely reveal about her residual volume and detrusor contractions.

First, I need to recall what the Q-tip test entails. From what I remember, the Q-tip test is a diagnostic tool used to assess urethral function. The provider inserts a Q-tip catheter into the urethra and measures the urethral pressure during the Valsalva maneuver. The goal is to see if there's a rise in pressure, which could indicate urethral obstruction or dysfunction.

In this case, the patient has a long history of urinary leakage during activities that increase intra-abdominal pressure, like coughing or sneezing. This suggests that she might have a urethral dysfunction, possibly urethropathic causes, such as urethral incompetence or a urethral diverticulum. The fact that she doesn't leak at night points towards a functional issue rather than a problem with the lower urinary tract that affects storage, like a neurogenic bladder.

Now, moving on to cystometry. Cystometry is a diagnostic procedure where a catheter is inserted into the bladder, and the pressure and volume inside the bladder are measured during filling and emptying. It's often used to assess bladder function, especially in patients with incontinence or voiding disorders.

The two key parameters here are residual volume and detrusor contractions. Residual volume is the amount of urine left in the bladder after voiding. A large residual volume can lead to increased bladder pressure, which might contribute to urinary incontinence during activities that increase pressure.

Detrusor contractions refer to the involuntary contractions of the detrusor muscle, which is the muscle layer of the bladder. These contractions help empty the bladder by increasing pressure. If there are abnormal or weak detrusor contractions, it might affect the patient's ability to completely empty their bladder, leading to residual volume and potential incontinence.

In this patient, since she experiences urinary leakage during activities that increase abdominal pressure, it's likely that her urethral function is impaired, possibly due to urethral incompetence or another urethral anomaly. The Q-tip test might have shown elevated pressures, indicating obstruction or urethral dysfunction.

Now, considering cystometry findings: if the Q-tip test suggested urethral obstruction, then during cystometry, we might observe that the detrusor contractions are normal, but the residual volume might be elevated because the urethral outlet isn't functioning properly, leading to incomplete emptying. Alternatively, if the detrusor contractions are weak or absent, it could indicate a neurogenic cause, but given her history and lack of nighttime leakage, a neurogenic cause is less likely.

Another possibility is that the detrusor contractions are normal, but the residual volume is high, which might be contributing to the functional urinary loss. The detrusor contractions might be normal in terms of strength, but the urethral function is the main issue, leading to incomplete emptying during activities that increase pressure.

So, putting it all together, cystometry would likely show an elevated residual volume and normal detrusor contractions, suggesting that the primary issue is with the urethral outlet rather than bladder emptying muscle function.
</think>

Based on the patient's history and diagnostic findings, cystometry would most likely reveal an elevated residual volume and normal detrusor contractions. This suggests that the primary issue lies with the urethral outlet, contributing to incomplete emptying during activities that increase intra-abdominal pressure, rather than a problem with bladder muscle function.<|end_of_sentence|>

<think>
Okay, so let's think about this. We have a 61-year-old woman who's been dealing with involuntary urine loss during things like coughing or sneezing, but she's not leaking at night. That suggests she might have some kind of problem with her pelvic floor muscles or maybe her bladder.

Now, she's got a gynecological exam and a Q-tip test. Let's break that down. The Q-tip test is usually used to check for urethral obstruction. If it's positive, that means there's something blocking the urethra, like a urethral stricture or something else.

Given that she's had a positive Q-tip test, it's likely there's a urethral obstruction. That would mean her urethra is narrow, maybe due to a stricture or some kind of narrowing. So, her bladder can't empty properly during activities like coughing because the urethral obstruction is making it hard.

Now, let's think about what happens when her bladder can't empty. If there's a urethral obstruction, the bladder is forced to hold more urine, increasing the residual volume. That's because her bladder doesn't empty completely. So, her residual volume is probably increased.

Also, if her bladder can't empty properly, she might have increased detrusor contractions. These contractions are usually stronger to push the urine out. So, we expect her detrusor contractions to be increased.

Putting it all together, if she has a urethral obstruction and a positive Q-tip test, we'd expect her cystometry results to show increased residual

volume and increased detrusor contractions. That makes sense because of the obstruction and how her bladder is trying to compensate by contracting more.
</think>
Based on the findings of the gynecological exam and the positive Q-tip test, it is most likely that the cystometry would reveal increased residual volume and increased detrusor contractions. The positive Q-tip test indicates urethral obstruction, which would force the bladder to retain more urine, increasing the residual volume. Additionally, the detrusor contractions may be increased as the bladder compensates for the obstruction, attempting to push more urine out despite the obstruction.<|end_of_sentence|>