

- #FHA, #amenorrhea, #[[women's health]], #[[Danielle J. Miller, M.D.]]
- **Dr. Miller's background – send me something I can read as an intro**
- **How did you become interested in women's health?**
- My Preamble
  - Today we're going to talk about amenorrhea. For the listener, we're here talking today because a couple of years ago I sought you out to help me out with a case. I had a young female patient with amenorrhea. I asked you to help me look at the case to make sure I was managing things as best as possible. Just recently we revisited this case report I put on my website and you had some really helpful suggestions, so we decided to sit down and talk it over. We thought people would benefit from hearing this conversation, because there's a lot of information out there about amenorrhea that's really technical for advanced clinicians, and there's a lot of info out there for non-medical people, but there's really not much that threads the needle.
  - This case should allow someone to have a pretty good idea of how to think about a case like this whether they're a lay person, an inexperienced clinician, or even an experienced clinician. We're going to cover the concerns of the individual as well as some detailed clinical parameters. The labs here are complicated, the imaging can be confusing. It's a complex topic.
  - Let's jump in with a discussion about the case, because it's a complex issue, and talking about it in the abstract is probably a lot harder than just going through a real world example.
- 27 y F with loss of menstrual period
  - fatigue
  - restless sleep, awakening in the middle of the night, sweating
  - paradoxical loss of exercise motivation and tolerance
  - headaches, light-headedness, palpitations, dry skin, muscle aches and cramps
- More case background
  - For some context, this is a really unbelievably fit person. This is the type of person who you'd see at the gym and just be totally awestruck. I worked out with her a few times and she would run circles around me. A really talented and highly trained athlete. And watching her train, you'd never think she was feeling bad. She was a college athlete and then after college was lifting, running, training crossfit.

- Despite all of this training - high intensity and volume, she was restricting her carbohydrates to under 100 grams of carbohydrate per day. She even intentionally maintained an energy deficit sometimes. She'd gone out of her way to find out her resting metabolic rate with a calorimeter. It's not a perfectly accurate method, but she found out her daily needs were probably around 3000 calories, but she would restrict herself to 1500 or 2000 calories pretty regularly.
- When she came to me, she was also in career limbo, stressed about relationships, and was very concerned with her physical appearance. She was used to people looking at her and being blown away by her leanness.
- **So, what do you think about this background? Is it common? What else about a patient's psychosocial background would you want to know about in this context?**
- Okay, so now we're going to get into some clinical information:
  - Menarche at age 14 – **is this typical?**
  - She's 5'7". In college she was around 155 pounds.
  - When she came to me, she was about 140 lbs.
  - That's a BMI of 22
  - **what do you think of BMI here?**
  - So, I actually got a DXA scan on this patient.
    - her body fat percent was estimated at 17%, fat free mass 80%
    - BMD T-score was 2.1
    - spine BMD 1.1 g/cm<sup>2</sup>
- **One of the points you made to me is that you really have to understand a person's body habitus - just knowing weight and BMI probably isn't enough?**
- **What do you think of the DXA results?**
- I've also got labs on this patient. I don't think it would be too helpful to go through numbers right now. All of the patient's numbers are on my website. We'll link to them in the notes for the video.
- But, maybe you can just help me go through the system to remind people how this works:
  - the hypothalamus releases LH and FSH
  - **what's the pattern?**
  - these stimulate the release of progesterone and estradiol
  - **what's the pattern of release of these throughout the menstrual cycle?**
- So, normally, we get this baseline release of LH and FSH, and then just before ovulation LH and FSH will spike along with a broader spike in

estradiol and then a later broad peak in progesterone release in the luteal phase. So, at the end of the luteal phase and the beginning of the follicular phase all of the hormones are at their lowest levels. Estradiol, LH, and FSH Should be at their highest around the time of ovulation. And progesterone is at its highest about one week after ovulation.

- **So, what happens in amenorrhea?**
- **can we use these hormone levels to differentiate between FHA and other causes of amenorrhea?**
  - I've got this chart on my article that shows how we might be able to do that.
- **does it matter when we measure the hormone levels in an FHA patient?**
- **how often should we measure them?**
- **what other testing should we do to diagnose a patient who's lost their period in whom we suspect FHA?**
  - we can talk about the pelvic ultrasound here
  - I'd really love to hear some detailed things that we can look at that the radiologist might not report on
- **what are some other diagnoses we need to look out for?**
- if we still have time after all of this, we could talk about treatment
- **What are some typical treatments?**
  - what's wrong with the usual treatments?
  - OCPs
  - Clomid
  - etc.
  - Where do these treatments come from?
  - is there anything good about them?
- **what's so difficult about the treatment for these patients?**
  - this would be a great place to emphasize how some patients really struggle with letting go of their exercise and diet habits – it's interesting because it's the reverse of the sort of problem we're used to dealing with - not enough exercise and too much energy consumption. this is the other end of the spectrum
- **how do you go about initiating treatment?**
  - do you have any protocols?
  - any helpful suggestions?
- So, what happened?
  - we had months of frequent coaching
  - my patient had a couple of different counselors

- she joined online support groups, she read books - no period, now what?
- she ended up gaining around 20–25 pounds and recovered her menstrual period in about 6 months
- **Other questions**
  - is amenorrhea problem? is it okay to not have your period if you're trying to be a competitive athlete?
  - how many women do you think have amenorrhea – top athletes, models, etc?
  - is there a similar condition in men? is treatment the same?