Menorrhagia Clinical Journal

Brittanie Smith

The George Washington University

Nurs 6231: FNP 2

Menorrhagia Clinical Journal

In this clinical case study, a 20-year-old African American female presented with a complaint of heavy, prolonged menstruation. I chose this patient as the focused case study because abnormal vaginal bleeding is a common chief complaint for women of any age and can be caused by numerous factors. The causes can be influenced by age, with certain factors more commonly occurring at specific ages. According to Schrager, Paladine, and Cadwallader (2016), abnormal bleeding is prevalent in 10% to 30% of women of reproductive age and accounts for up to 25% of all gynecological surgeries. One of the most common presentations of abnormal bleeding is menorrhagia, or heavy bleeding during menstruation (Schrager et al., 2016). This symptom can indicate a serious issue that needs to be immediately addressed, such as uterine cancer or a coagulation disorder (Dains, Baumann, & Scheibel, 2015). In addition, the cause may be more benign, such as leiomyomas or thyroid dysfunction (Dains et al., 2015). Regardless of the final diagnosis, menorrhagia needs to be fully evaluated to establish the appropriate treatment plan.

SOAP Note

ID: S. B., 20-year-old African American female Date: 9/13/17

SUBJECTIVE

CC: "My periods are really long and heavy."

HPI: Pt presents with heavy, prolonged menstrual cycle. LMP was 8/29/17. Not menstruating today. Most recent menstruation lasted for two weeks and pt reports "large clots." Has to change tampon at least every two hours during menstruation. Menstruation occurs every two to three weeks and varies in length. Symptoms began "a few months ago" after stopping birth control because she "ran out of pills." Denies current birth control use. Denies history of similar symptoms. No relieving or aggravating factors. No recent stressors. Denies lower abdominal

pain, pelvic pain, pregnancy, lightheadedness, or shortness of breath with activity. Requests STI testing.

ROS
General*:* Denies recent illness, fever, night sweats, chills, nausea, vomiting, weakness, fatigue, or significant weight changes.
Skin: Denies easy bruising or bleeding.
Lymph Node*:* Denies swelling.
Thyroid*:* Denies neck masses, heat intolerance, cold intolerance, hair loss, palpitations, or nervousness.
Pelvic*:* C/o heavy bleeding during menstruation and prolonged menses. Denies pain, dysuria, pruritus, abnormal discharge, postcoital bleeding, or missed menses.

PMH: No previous medical history. No prior pregnancies. ***Age of menarche***: 11 years old.

Immunizations: None on file. Declines Gardasil vaccine.

PSH: No surgical history.

Medications: None

Allergies: NKDA

Family Hx: Family history unknown as pt is unable to recall.

Social Hx: Not married. Currently in a relationship. Consumes 1-3 caffeinated beverages a day. Denies tobacco use, but is exposed to second hand smoke. Denies alcohol or illicit drug use. Does not exercise.

OBJECTIVE
Physical Exam
Vital Signs: *Weight*: 275 lbs *Height*: 63 in *BMI*: 48.7 *BP*: 120/64
General: Well-appearing, obese, African American female in no acute distress. Speech clear and makes good eye contact.
Skin: Scant hirsutism on face. Mucus membranes pink and moist. No pallor or ecchymosis.
Lymph Node: No inguinal adenopathy.
Thyroid: Thyroid isthmus midline. Lobes palpable, but not enlarged.
Pelvic: *Vulva*: Bartholin glands unremarkable. No atrophy, lesions, erythema, or masses. Urethral meatus normal. Urethral palpation unremarkable. *Bladder*: Unremarkable. *Vagina*: Mucosa pink and moist. No evidence of prolapse. Rugae present. *Cervix*: Parous, pink, and

nontender. No abnormal secretions, lesions, or ulcerations. No tenderness. *Uterus*: Anterior, midline, smooth, nontender, and not enlarged. No adnexal tenderness or masses.

Diagnostics
In-office urine pregnancy test: Negative

ASSESSMENT

1. Menorrhagia N92.6

- Rationale: I chose menorrhagia as this patient's final diagnosis because she reports predictable and regular menstruation, but complains of heavy and prolonged bleeding during menses. Menorrhagia is defined as heavy bleeding, which mirrors this patient's chief complaint (Schrager et al., 2016). At this point, I have not completed any further diagnostic tests that would explain why this patient is experiencing menorrhagia so any further specification would be inaccurate until this patient is fully evaluated.

PLAN

Diagnostics: Transvaginal ultrasound in 1 week; ***Labs***: TSH, CBC, and STI panel (gonorrhea, chlamydia, trichomoniasis, herpes, syphilis, and HIV)

Therapeutics: None at this time. Will reassess after final lab results.

Education: Counsel patient about weight loss to improve health. Discuss health risks associated with unhealthy eating as well as benefits of portion control, healthy food choices, and increased water intake. Encourage patient to increase physical activity to at least 30 minutes of moderate exercise at least five days a week. Discuss emergent signs and symptoms of heavy bleeding that would warrant immediate medical attention, including having to change pad/tampon at least hourly, fatigue, pallor, palpitations, chest pain, dyspnea, tachypnea, and/or tachycardia.

Follow-up: Follow-up consult visit in 3 weeks to discuss diagnostic results.

Diagnostic Reasoning Table

DDx	Pertinent Positives	Pertinent Negatives	Data Needed to Support
Uterine cancer (ACOG, 2013; Bulun, 2016; Dains et al., 2015)	+ painless menorrhagia + enlarged uterus + pelvic pressure + weight loss + weakness	- no enlarged ovaries	• Endometrial biopsy • D&C • Ultrasound • CT or MRI
Coagulation disorder (ACOG, 2012; Bope & Kellerman, 2017)	+ menorrhagia + fatigue + bruising + pallor	- no uterine enlargement - no uterine or ovarian masses - no pelvic tenderness	• CBC • PT/INR
Polycystic ovary syndrome (ACOG, 2012; ACOG, 2013; Dains et al., 2015; Lobo, 2017)	+ irregular menstrual cycles + hirsutism + enlarged ovaries +/- obesity	- no fatigue - no uterine masses - no pelvic tenderness	• Pelvic exam • Serum androgen levels • Ultrasound
Pelvic inflammatory disease (Hall, 2012)	+ vaginal discharge + postcoital or intermenstrual bleeding + lower abdominal pain + dysuria + pruritus + cervical motion tenderness	- no uterine masses	• CBC • Genital culture

DDx	Pertinent Positives	Pertinent Negatives	Data Needed to Support
Thyroid dysfunction (ACOG, 2012; ACOG, 2013; Dains et al., 2015; Ferri, 2018; Sweet et al., 2012)	<u>Hyperthyroidism</u> +menorrhagia +weight loss +anxiety +diarrhea +heat intolerance <u>Hypothyroidism</u> +menorrhagia +weight gain +fatigue +constipation +cold intolerance	<u>Hyperthyroidism</u> - no cold intolerance - no fatigue <u>Hypothyroidism</u> - no heat intolerance - no significant unintentional weight loss - no hair loss <u>Either</u> - no pelvic tenderness - no uterine or ovarian masses	<u>Either</u> • TSH • Serum T4 and T3
Benign uterine leiomyomas (ACOG, 2012; Dains et al., 2015; Sweet et al., 2012)	+ heavy menstrual bleeding +menorrhagia +enlarged uterus +firm, spherical masses	- no pelvic tenderness	• Pelvic exam • Ultrasound
Spontaneous abortion (ACOG, 2012; ACOG, 2013; Dains et al., 2015)	+vaginal bleeding +/- uterine cramping +prior missed menses	- no uterine masses	• Pregnancy test • Ultrasound

Management Plan

The SOAP note included a comprehensive history and focused physical exam related to the patient's chief complaint. The physical exam included skin to identify acne, hirsutism, or acanthosis nigricans, which would indicate polycystic ovary syndrome as well as pallor or ecchymosis, indicating a coagulation disorder (American College of Obstetricians and Gynecologists [ACOG] 2012; Lobo, 2017). A pelvic exam was included to identify cervical, uterine, or adnexal tenderness as well as any masses, lesions, or current abnormal discharge (ACOG, 2012). The lymph nodes were examined to identify swelling, which would indicate a possible infectious process, and the thyroid was examined to identify any masses or goiters, indicating thyroid involvement (ACOG, 2012). The review of systems and physical exam focused on ruling in and ruling out the differential diagnoses.

Pertinent positives associated with the patient's menorrhagia that were addressed included the extended length of menstruation, significant blood loss during menstruation, predictable frequency of menstruation, and evidence of hirsutism. The description of the prolonged, heavy bleeding helped to guide my differential diagnoses list. In addition, pertinent negatives were also addressed. These negatives included a lack of fatigue, easy bruising, pallor, lymph node enlargement, constipation, cold intolerance, lower abdominal pain, pelvic pain, uterine tenderness, or masses. A negative pregnancy test also helped to rule out a current pregnancy, an ectopic pregnancy, or a spontaneous abortion as the cause of the abnormal bleeding. Based on the patient's subjective and objective data, I still could not provide a firm diagnosis for her symptoms without further testing. Because she was complaining of prolonged, heavy bleeding without any other accompanying complaints, I ultimately diagnosed her with

menorrhagia at this visit (Schrager et al., 2016). Based on the information presented in the SOAP note, I devised a specific differential diagnoses list.

I included an array of differential diagnoses in the diagnostic table based on the patient's chief complaint of menorrhagia. I made sure to consider the most critical diagnoses that could be potentially life-threatening for this patient and should not have been missed as well as ones that were less harmful, but more likely. If undiagnosed, each diagnosis could have its own negative effects on the patient. The diagnoses of uterine cancer and a coagulation disorder were placed at the top of the table because they were the most life-threatening. Uterine cancer can metastasize to other parts of the body and lead to death, if left untreated (Hacker, 2016). While uterine cancer is most commonly found in postmenopausal women, I included it because it can still occur in younger women (Swartz, 2014). In addition, this patient is obese and obesity increases the risk of uterine cancer due to elevated amounts of unopposed estrogen (Swartz, 2014). Second, I included a coagulation disorder because it can present as menorrhagia and is an important diagnosis to rule out in this presentation (ACOG, 2012; Bope & Kellerman). I placed it second on the list because it can also lead to seriously harmful consequences if left undiagnosed. Next, I considered polycystic ovary syndrome because it can lead to severe long-term complications, including infertility, type 2 diabetes, cardiovascular disease, and a potential increased risk of cancer, but is not immediately life-threatening (Lobo, 2017). I included it in the table due to its common presentation as menorrhagia and the additional physical exam finding of hirsutism in this patient, a key characteristic of the disease (Wilson & Sheikh-Ali, 2016).

I placed pelvic inflammatory disease on the list because it can cause irregular bleeding and lead to infertility (Hall, 2012). However, I put it further down on the table because its

complications are less severe than polycystic ovary syndrome (Bope & Kellerman, 2017). I listed thyroid dysfunction next because it can lead to distressing and life-threatening symptoms if not treated, but was less likely to be causing this patient's symptoms due to the lack of any pertinent positives aside from menorrhagia. After thyroid dysfunction, I chose to include benign uterine leiomyomas because they can cause menorrhagia as well, but are generally harmless tumors that arise without significant consequence (Dains et al., 2015; Khan & Stewart, 2014). Finally, I placed a spontaneous abortion at the end of the list because, although the patient was not bleeding at the time of the visit, she could have miscarried during her last episode of vaginal bleeding (Dains et al., 2015). The patient is a sexually active female, and although her sexual preference is female and she is currently in a relationship with a female, I did not want to assume she was not also sexually active with males. Her in-office urine pregnancy test was negative, but I wanted to confirm the result with further testing to be sure. Although it was likely the patient's menorrhagia was related to a hormonal imbalance due to its onset after stopping birth control, fully evaluating all the potential causes were crucial for her diagnostic work-up. While many problems can cause menorrhagia, I was able to narrow down the differential diagnoses list based on the patient's history and presentation.

I could have included an ectopic pregnancy in the differential diagnoses list, but it was very unlikely this patient had experienced one. An ectopic pregnancy usually presents with current vaginal spotting or bleeding, abdominal pain, prior missed menses, and a positive pregnancy test (Nelson & Gambone, 2016). The patient's in-office pregnancy test was negative, she was not having any pain, her bleeding had stopped, and she had been experiencing these symptoms for a few months. In addition, cervical cancer could have caused the menorrhagia as

well. However, it was not included in the differential diagnoses table or the work-up because it was not a likely diagnosis and is not recommended to initially investigate per current management guidelines (ACOG, 2013; Sweet et al., 2012). Determining the cause of the menorrhagia and providing a more specific diagnosis was the focus of the management plan.

The management plan included various lab tests and a transvaginal ultrasound to gather more definitive information. These tests are recommended for evaluating a patient presenting with menorrhagia (ACOG, 2012; ACOG, 2013; Bulun, 2016; Hall, 2012; Swartz, 2014; Sweet et al., 2012; Wilson & Sheikh-Ali, 2016). Regarding initiating medication, my preceptor chose to wait until the diagnostic tests were completed before restarting the patient's birth control. He wanted to rule out other serious diagnoses first. In reference to patient education, this patient was obese, indicating the necessity of counseling about weight loss and nutrition. Furthermore, her obesity could have been contributing to her menorrhagia so discussing weight loss may help her symptoms (Swartz, 2014). Reviewing emergent signs and symptoms related to menorrhagia was pertinent as well. Any patient presenting with an acute problem should always be aware of when to seek immediate medical attention. Having her follow-up in the office in three weeks was also important to ensure her test results would be back and to discuss the findings in person, which would better facilitate understanding and follow-up compared to a phone conversation.

Analysis of Encounter

When examining the management plan, each test served a critical role in determining the final diagnosis. The in-office pregnancy test was completed to rule out a current pregnancy, possible ectopic pregnancy, or a spontaneous abortion (Bulun, 2016). The transvaginal ultrasound is a critical component that can identify a missed pregnancy, uterine leiomyomas,

cysts, polyps, cancer, or an ovarian tumor (Bulun, 2016; Wilson & Sheikh-Ali, 2016). The thyroid-stimulating hormone (TSH) test can identify endocrine issues (ACOG, 2013; Bope & Kellerman, 2017; Bulun, 2016; Wilson & Sheikh-Ali, 2016). The complete blood count (CBC) would reveal if abnormal blood counts were contributing to the bleeding or identify the presence of anemia (ACOG, 2013; Sweet et al., 2012). Finally, the sexually transmitted infection (STI) testing will help to identify pelvic inflammatory disease caused by gonorrhea or chlamydia as well as the presence of another infection that may be presenting as menorrhagia (Hall, 2012). The results of each one of these tests will provide further information to help establish a final diagnosis.

Ultimately, this patient was diagnosed with polycystic ovary syndrome. Her physical finding of hirsutism helped to clue my preceptor and me to the diagnosis, but the transvaginal ultrasound was the confirming test. Her ultrasound revealed polycystic ovaries, a clear indicator of polycystic ovary syndrome (Lobo, 2017). The diagnosis of polycystic ovary syndrome relies on clinical findings rather than lab values so my preceptor concluded that the menstrual irregularity and polycystic ovaries were enough evidence to definitively diagnose the patient with it. Her goal of treatment ultimately focused on controlling the amount of blood loss during menstruation and the length of her period.

Discussing nutrition and weight loss were also important for this patient, regardless of her final diagnosis. Her body mass index was 48.7, which classified her as obese (National Institutes of Health, n.d.). According to Wood and Bauman (2015), obesity in early adulthood significantly increases the risk of irregular bleeding for reproductive-age women. This incidence is caused by high estrogen levels as well as a lack of progesterone, leading to endometrial overgrowth and

heavy bleeding (Wood & Bauman, 2015). Not only can obesity cause menorrhagia, but it can also lead to numerous other health problems, including dyslipidemia, type 2 diabetes, and coronary artery disease (Bohman, Stone, & DeBusk, 2016). Encouraging her to lose weight was a beneficial nonpharmacological method to help improve her menorrhagia. It was also important to counsel the patient about the signs and symptoms of excessive blood loss that would warrant immediate medical attention. She should be aware of when to seek medical attention in the event the bleeding becomes severe.

In regards to evidence-based guidelines, there are recommendations for evaluating abnormal uterine bleeding from a couple of professional organizations. The American Academy of Family Physicians recommends a pregnancy test, thyroid-stimulating hormone test, complete blood count, and prolactin level to evaluate the cause (Sweet et al., 2012). The American College of Obstetricians and Gynecologists also recommends a pregnancy test, thyroid-stimulating hormone test, complete blood count, and prolactin level (ACOG, 2012; ACOG, 2013). However, it also includes the option of a transvaginal ultrasound to rule out any anatomic issues as well as chlamydia testing (ACOG, 2012; ACOG, 2013). These recommendations closely resemble each other as well as the management plan outlined by my preceptor and me for this patient's chief complaint. The management plan was guided mainly by the recommendations of the American College of Obstetricians and Gynecologists, but also the clinical presentation of the patient.

Overall, I felt the case was well-managed considering the history provided by the patient and the findings identified by the physical exam. The tests ordered covered a wide range of possible causes of menorrhagia in a young adult female and were influenced by evidence-based

guidelines to justify their use. However, in addition to the tests my preceptor ordered, I would have wanted to order a prolactin level. This test would reveal if the patient's menorrhagia was related to anovulation or hyperprolactinemia (ACOG, 2012; ACOG, 2013; Bulun, 2016; Sweet et al., 2012). Hyperprolactinemia is a well-known cause of irregular bleeding in reproductive-age women and is recommended to investigate in the setting of abnormal uterine bleeding by the American College of Obstetricians and Gynecologists as well as the American Academy of Family Physicians (ACOG, 2012; ACOG, 2013; Bope & Kellerman, 2017; Sweet et al., 2012). Although my preceptor did not feel it was a likely diagnosis at the time and chose not to include it in the differential diagnoses list, I would have wanted to definitively rule it out based on current guideline recommendations.

Regarding co-morbidities, this patient's obesity played a compelling role in her presenting complaint. As discussed previously, obesity has a significant role in the onset of abnormal uterine bleeding and can also lead to future health problems. Including a discussion about weight loss and improving unhealthy eating habits was critical to improving this patient's health. While obese women presenting with menorrhagia should be evaluated in the same manner as normal weight women, acknowledging the role obesity plays in hormonal imbalances is important (Seif, Diamond, & Nickkho-Amiry, 2015). Encouraging a healthier lifestyle would be the goal for any obese patient, regardless of the presenting complaint.

From this case, I have a gained a significant amount of knowledge regarding menorrhagia, its causes, and the appropriate work-up. The most beneficial information I have learned about menorrhagia is the consideration of age when formulating a differential diagnoses list. In an adolescent presenting with menorrhagia, the most common causes to consider include

normal anovulatory cycles, a bleeding disorder, pregnancy, sexual trauma, and sexually transmitted infections (ACOG, 2013; Schrager et al., 2016). In reproductive-age women, the potential causes include polycystic ovary syndrome, pregnancy complications, sexually transmitted infections, leiomyomas, endometrial polyps, coagulation disorders, liver failure, and chronic renal failure (ACOG, 2013; Schrager et al., 2016). In premenopausal women, the causes include uterine fibroids or polyps, bleeding disorders, endometrial cancer, and, less commonly, pregnancy (ACOG, 2013; Schrager et al., 2016). In post-menopausal women, the main concerning cause is uterine cancer (Schrager et al., 2016). Although some of the causes overlap in the various age groups, I learned that a few causes are more commonly found in certain age groups compared to others, such as the suspicion of uterine cancer.

There are a few key points I will take away from this experience that will influence my practice. First, I will consider the importance of utilizing multiple evidence-based guidelines to guide my practice. Although I was aware of implementing evidence-based guidelines prior to this case, I did not consider the importance of consulting multiple resources to fully evaluate a patient's chief complaint. For example, my preceptor relies on the recommendations of the American College of Obstetricians and Gynecologists when deciding treatment plans for his patients. However, the American College of Obstetricians and Gynecologists has multiple resources to address abnormal vaginal bleeding. One resource did not include a complete blood count in its guidelines for evaluating a patient with abnormal uterine bleeding while another resource as well as the American Academy of Family Physicians actually did recommend including it (ACOG, 2012; ACOG, 2013; Sweet et al., 2012). While it is ultimately up to the provider to order the tests he or she may see fit, I can appreciate the benefit of consulting

numerous guidelines to gain a better picture of the problem. In addition, I will also remember to consider other factors that can influence the cause of a patient's presenting symptoms, including age and existing co-morbidities. Although this patient presented with a common chief complaint among women, her age affected the formulation of my differential diagnoses list and the presence of obesity guided my treatment plan as well as my diagnostic process due to its relationship with menorrhagia.

Summary

Menorrhagia has a variety of causes and refining the list of those possible causes requires various tests to rule out and rule in suspected culprits. Through a thorough and focused history and physical exam, appropriate diagnostic testing, and an individualized treatment plan, women afflicted with menorrhagia can find relief, or at the very least, improvement in their symptoms. By evaluating this patient, I continued to learn the value of evidence-based resources and the influence of co-morbidities and age on presenting complaints. This case has allowed me to improve my practice by looking at the patient as a whole person and not just a symptom, a technique I plan to implement in my own clinical practice. Through careful assessment and diagnostic reasoning skills refined during this evaluation, I am continuing to grow as a practitioner to better serve my patients.

References

The American College of Obstetricians & Gynecologists (ACOG). (2012). Practice bulletin no. 128: Diagnosis of abnormal uterine bleeding in reproductive-aged women. *Obstetrics and Gynecology, 120*(1), 197-206. doi: 10.1097/AOG.0b013e318262e320

The American College of Obstetricians & Gynecologists (ACOG). (2013). Practice bulletin no. 136: Management abnormal uterine bleeding associated with ovulatory dysfunction. *Obstetrics & Gynecology, 122*(1), 176-185. doi: 10.1097/01.AOG.0000431815.52679.bb

Boham, E., Stone, P. M., & DeBusk, R. (2016). Obesity. In Rakel, R.E. & Rakel, D.P. (Eds.). *Textbook of family medicine* (9th ed.) (pp. 867-890). Philadelphia, PA: Elsevier.

Bope, E. T. & Kellerman, R. D. (2017). *Conn's current therapy 2017*. Philadelphia, PA: Elsevier.

Bulun, S. E. (2016). Physiology and pathology of the female reproductive axis. In Melmed, S., Polonsky, K. S., Crane, R. T., Larsen, P. R., & Kronenberg, H. M. (Eds.). *Williams textbook of endocrinology* (13th ed.)(pp. 589-663). Philadelphia, PA: Elsevier.

Dains, J. E., Baumann, L. C., & Scheibel, P. (2016). *Advanced health assessment and clinical diagnosis in primary care* (5th ed.). St. Louis, MO: Elsevier.

Ferri, F. F. (2018). *Ferri's clinical advisor 2018*. Philadelphia, PA: Elsevier.

Hall, J. E. (2012). Chapter 50. Menstrual disorders and pelvic pain. In Longo, D. L., Fauci, A. S., Khan, Z. & Stewart, E. A. Benign uterine diseases. In Strauss, J. F. & Barbieri, R. L. (Eds.). *Yen & Jaffe's reproductive endocrinology* (7th ed.)(pp. 586-603). Philadelphia, PA: Elsevier Saunders.

Lobo, R. A. (2017). Polycystic ovary syndrome. In Lobo, R. A., Gershenson, D. M. Lentz, G. M., & Valea, F. A. (Eds.). *Comprehensive gynecology* (7th ed.)(881-896). Philadelphia, PA: Elsevier.

National Institutes of Health. (n.d.). *Calculate your body mass index*. Retrieved from https://www.nhlbi.nih.gov/health/educational/lose_wt/BMI/bmicalc.htm

Nelson, A. L. & Gambone, J. C. (2016). Ectopic pregnancy. In Hacker, N. F., Gambone, J. C., & Hobel, C. J. (Eds.). *Hacker & Moore's essentials of obstetrics & gynecology* (6th ed.)(pp. 304-313). Philadelphia, PA: Elsevier.

Seif, M. W., Diamond, K., & Nickkho-Amiry, M. (2015). Obesity and menstrual disorders. *Best Practice & Research: Clinical Obstetrics & Gynaecology, 29*(4), 516-527. doi: 10.1016/j.bpobgyn.2014.10.010

Swartz, M. H. (2014). *Textbook of physical diagnosis* (7th ed.). Philadelphia, PA: Elsevier Saunders.

Sweet, M. G., Schmidt-Dalton, T. A., Weiss, P. M., & Madsen, K. P. (2012). Evaluation and management of abnormal uterine bleeding in premenopausal women. *American Family Physician, 85*(1), 35-43. Retrieved from http://www.aafp.org/afp/2012/0101/p35.html#afp20120101p35-b21

Wilson, G. A. & Sheikh-Ali, M. (2016). Endocrinology. In Rakel, R.E. & Rakel, D.P. (Eds.). *Textbook of family medicine* (9th ed.) (pp. 817-866). Philadelphia, PA: Elsevier.

Wood, P. L. & Bauman, D. (2015). Gynaecological issues affecting the obese adolescent. *Best Practice & Research: Clinical Obstetrics & Gynecology, 29*(4), 453-465. doi: 10.1016/j.bpoobgyn.2014.10.015