BELIEVE MIDWIFERY SERVICES, LLC

TITLE: UTERINE FIBROIDS
EFFECTIVE DATE: March 7th, 2015

POLICY STATEMENT
Uterine leiomyomas, also known as fibroids or myomas, are the most common type of gynecologic tumor encountered by health care providers in the United States, affecting approximately 50% of women aged over 30 years and up to 70% of women reaching fifty. The presence of uterine leiomyomas can negatively impact a woman’s quality of life as well as her fertility. Thus, it is important for all clinicians caring for women to be able to identify, treat, and educate clients about leiomyomas.

BLOOD BORNE PATHOGEN
EXPOSURE CATEGORY: I (Involves exposure to blood, body fluids, or tissues)

FUNCTION: Care of Clients

EQUIPMENT:
1. Assessment equipment - gloves, KY

POINTS OF EMPHASIS:
Leiomyomas are most commonly found in women between age 30 years and the onset of menopause, although most remain asymptomatic. Symptomatic leiomyomas produce menstrual cycle irregularities such as menorrhagia and pain including dysmenorrhea, which can greatly decrease a woman’s quality of life. Leiomyomas also may contribute to infertility and spontaneous abortion. Although leiomyomas are the leading indication for hysterectomy globally, alternative surgical and medical options exist.

As many as 50% of women with uterine leiomyomas are asymptomatic; however, this may be an underestimation. The first indication of their presence may be an enlarged uterus found during routine examination or may be an incidental finding on imaging for unrelated symptoms. The percentage of women experiencing symptoms related to leiomyoma presence is estimated to be between 20% and 50%. Risk factors include black race, having a first-degree relative with leiomyomas, and increased lifetime exposure to estrogen due to factors such as obesity, early menarche, and nulliparity. The most common symptoms associated with uterine leiomyomas include menstrual irregularities, pelvic pain, and infertility.

Menstrual abnormalities that are generally associated with uterine leiomyomas include menorrhagia, menometrorrhagia, and intermenstrual bleeding. Bleeding is thought to be the most common concern of symptomatic women with leiomyomas. However, this association is not well understood. One theory points to increased estrogen and progesterone receptors within uterine fibroids, as well as altered estrogen metabolism, ultimately leading to vascular abnormalities causing excessive bleeding (Stewart and Nowak, 1996).

Pain associated with uterine leiomyomas include dyspareunia, noncyclic pelvic pain, and dysmenorrhea. However, the most commonly identified symptoms are menstrual irregularities, pelvic pain, obstructive symptoms, and infertility.

Uterine leiomyomas identified through physical examination often reveal an enlarged, irregular-shaped uterus that is firm and nontender. An abnormal bimanual examination is often the first indication of the presence of leiomyomas, even in obese women. Degenerating leiomyomas may have a softer consistency and be associated with severe abdominal pain.
Occasionally, larger leiomyomas may result in symptomatology including abdominal or pelvic pressure, constipation, bloating, backache, and urinary frequency or retention. Hydronephrosis or bowel obstruction may develop secondary to pressure on abdominal and pelvic organs created by leiomyomas. Rarely, deep vein thrombosis or pulmonary embolism result from leiomyoma-related compression of surrounding abdominal and/or pelvic structures, leading to venous stasis. These women will present with signs and symptoms of these emergent conditions with a pelvic mass.

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<th>Pelvic and/or abdominal pain</th>
<th>Ectopic pregnancy</th>
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<td>Ovarian cyst including ruptured or hemorrhagic cysts</td>
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<td>Adnexal torsion</td>
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<td>Pelvic inflammatory disease</td>
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<td>Endometriosis</td>
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<td>Adenomyosis</td>
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<th>Pelvic mass</th>
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<td>Uterine sarcoma</td>
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<td>Leiomyosarcoma</td>
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<td></td>
<td>Ovarian cyst</td>
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<td>Ovarian fibroma</td>
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<th>Menstrual irregularities</th>
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<td>Endometrial polyp</td>
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<td>Polycystic ovary syndrome</td>
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<td>Endocrine pathology</td>
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<td>Anovulation</td>
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<td>Malignancy of endometrium, cervix and vagina</td>
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Uterine leiomyomas may contribute to subfertility, miscarriage, and complications during labor and birth. They are speculated to be the sole cause of infertility in 2% to 3% of women but may contribute to infertility in 5% to 10% of women. Leiomyomas also are estimated to be the cause of approximately 7% of recurrent spontaneous abortions. The location of the leiomyoma is seemingly significant. Submucosal leiomyomas decrease rates of pregnancy, implantation, and live births. Subserosal leiomyomas may not impair fertility or increase pregnancy loss, while intramural leiomyomas may impair fertility.

Leiomyomas may negatively impact fertility due to cervical displacement, deformity of the uterine cavity, obstruction of Fallopian tubes or internal cervical os, disruption of uterine contractility, disruption of the endometrium, abnormal endometrial blood flow, or by causing an increased inflammatory environment within the uterus.

They are a concern during pregnancy due to the pregnancy-related elevation in sex hormone levels, which is thought to stimulate their growth. Leiomyomas occur in an estimated 2.7% to 12.6% of pregnant women and have been associated with adverse pregnancy outcomes such as malpresentation, spontaneous abortion, and preterm birth. Authors report that leiomyomas appear to grow during the first trimester and shrink later in pregnancy. Resolution may occur after birth and is believed to result from ischemia of the myometrium, to which leiomyomas are more susceptible because of their irregular vasculature. Increased parity appears to reduce a woman’s risk of leiomyomas, possibly through the protective effects of tissue remodeling during postpartum involution.

PROCEDURE:

1. Leiomyomas may be associated with menstrual irregularities, pain, and infertility; therefore, a thorough work-up of symptom-based differential diagnoses is warranted.
a. ACOG (1994) stated that “uterine fibroids can be diagnosed with 95% certainty by examination alone.” ACOG recommends augmenting physical examination with ultrasonography in cases involving obese women or when adnexal pathology cannot be excluded based on examination alone.
b. Routine ultrasonography does not improve long-term clinical outcomes for fibroids. The SGOC (2003) recommends against routine ultrasonography, since it rarely affects the clinical management of uterine fibroids. However, it emphasizes the importance of ruling out underlying endometrial pathology in women with abnormal uterine bleeding.

2. Additional diagnostic testing is indicated for clients with suspected fibroids and abnormal uterine bleeding, increased pelvic girth, pelvic pressure contributing to urinary frequency or constipation, or pelvic pain with intercourse or other physical activity.
   a. Pregnancy test;
   b. Complete blood count;
   c. Complete metabolic panel;
   d. Prolactin level;
   e. Thyroid panel; and
   f. Coagulation studies (based on presenting concern).

3. Diagnostic imaging is used to confirm clinical suspicion of leiomyomas. Imaging studies used to diagnose uterine leiomyomas primarily include ultrasound and magnetic resonance imaging (MRI), with selective use of computed tomography (CT) and hysterosonography (HSG).

4. Ultrasound is often the first method used to detect the presence of leiomyomas due to its availability and low cost. Transvaginal ultrasound provides better visualization of the endometrium and submucosal leiomyomas than abdominal ultrasound, especially in obese women. Limitations of transvaginal ultrasound include operator-dependent variability, failure to detect small uterine leiomyomas, and difficulty in mapping large uteri, particularly when there are multiple leiomyomas. Transabdominal ultrasound is able to locate large leiomyomas, while transvaginal ultrasound is better at detecting leiomyomas that are near the cervix. Larger leiomyomas may be evaluated best using a combination of abdominal and transvaginal ultrasound techniques. Uterine leiomyomas typically appear as symmetrical, well-defined, heterogenous, solid masses on ultrasound examination. The uterus may appear bulky or enlarged, with an abnormality in the normal contour. Degenerative leiomyomas may have a complex contour.

5. Sonohysterography however is more sensitive and specific than TVS in detecting submucous myomas and focal endometrial lesions, via the use of saline contrast while utilizing the transvaginal ultrasound.

6. MRI is preferred in cases for which exact myoma mapping is necessary and those with multiple myomas or large uteri who are scheduled for advanced surgical procedures. Leiomyomas as small as 5mm in diameter can be visualized with MRI, and this technique also is capable of differentiating adenomyosis from uterine leiomyomas. Despite these advantages, MRI is expensive and poses difficulties for women who experience claustrophobia.

7. Leiomyosarcoma may be diagnosed preoperatively with total serum lactic acid dehydrogenase (LDH), LDH isoenzyme 3, and gadolinium-enhanced MRI (Parker, 2007).

Avoid hesitating to obtain a SIS or HSC for a client with fibroids and AUB. The diagnosis of a sub mucous fibroid is expedited and the client can then be counseled appropriately, as operative removal generally brings more client satisfaction than the less interventional options.

**Lifestyle: Nutrition, Diet and Supplements**

1. A thorough discussion of lifestyle habits that contribute to an elevated estrogen milieu should be undertaken by the nurse-midwife. There is an association between obesity and increased risk of fibroids due to conversion of androgens to estrogens in adipose tissue via aromatase (Flake et al., 2003).
   1. The greater one’s physical activity, the less likely they are to have fibroids (Baird et al, 2007).

2. Dietary choices influence estrogen excretion. Vegetarian women have a three-fold increase in fecal excretion of estrogen and 15-20% lower serum estrogen levels (Gorbach and Goldin, 1987).
   1. Green vegetables demonstrate a protective effect.

3. Isoflavones and lignans are the two main classes of phytoestrogens. Findings suggest a modest inverse association between urinary excretion of the mammalian lignans enterodiol and enterolactone and the
development of uterine fibroids. Lingnan consumption, found in flaxseed and whole grains, may be a viable dietary strategy for reducing the risk of uterine fibroids (Atkinson et al., 2006). The isoflavones, daidzein and genistein, are found predominantly in soy foods. However, prudent consumption of whole soy foods should be recommended, rather than concentrated or processed options.

4. The phytochemical, indole-3-carbinol (I3C), found in cruciferous vegetables (broccoli, brussels sprouts, cabbage, and cauliflower) alters estrogen metabolism by promoting the formation less potent estrogen metabolites (Minich and Bland, 2007).

5. Encouraging women with fibroids to consume a higher intake of anti-inflammatory omega 3 fatty acids, and reduce their consumption of omega 6 fatty acids, would theoretically curb fibroid growth along with the other known benefits of these fatty acids.

6. High caffeine and coffee intake (>500 mg/day) may increase early follicular phase estradiol (E2) levels compared to those with lower levels of consumption (100 mg/day) independent of alcohol consumption or tobacco use. Therefore a moderate consumption of caffeine products would be recommended for women with fibroids. Limiting alcohol consumption to <1 serving per day seems prudent in view of alcohol’s effects on the liver and hence estrogen metabolism.

7. More recently, there has been intriguing research showing significant growth-inhibiting effects of physiologic vitamin D on leiomyomata cells that are mediated predominately through a B1/S phase block of the cell cycle. Hypovitaminosis D may play an important role in fibroid growth (Blauer et al, 2009).

8. In heavy AUB and secondary iron deficiency anemia are a concern, then iron-rich foods, taken with vitamin C to enhance absorption, are recommended. Vitamin C and bioflavonoids significantly strengthen blood vessel walls in women with menorrhagia (Choen, 1960). Depending on the class of the bioflavonoid, antiinflammatory, antioxidant, and anti proliferative properties have been described.

Botanical Recommendations

It may take several months to achieve significant benefit, fibroids are likely not to shrink, but the herbal therapies may inhibit further growth and subdue symptoms of AUB or secondary dysmenorrhea until natural menopause occurs (Hudson, 2008).

9. Chaste tree berry is often recommended for women with AUB because of its progesterogenic effect, especially on the endometrial lining. It increases luteinizing hormone (LH) and inhibits follicle-stimulating hormone (FSH). Chaste tree also has dopaminergic properties, giving it an ability to inhibit PRL release. Using it with hormonal contraception or replacement therapy, dopamine-related medications are theoretically contraindicated. It is not advised in women with breast cancer.
   1. Minimal, reversible side effects have included itching or rash, headache, gastrointestinal disturbance, menstrual disorders, acne, and diminished libido.
   2. The usual daily dose is 2240-500 mg crude herb, 215 mg extract standardized to 0.6% aucubin, or 175 mg extract standardized to 0.75% anguish.

10. Ginger and turmeric may be beneficial to women with fibroids, given their antiinflammatory activity. Ginger and curcumin, an active compound in turmeric, are dual inhibitors of cyclooxygenase and lipoxygenase. Ginger is useful in reducing the flow from heavy and protracted menses.
   1. The dose for menorrhagia is 1-4 g/day dried powder or ginger root extract (5% gingerols) 100 mg/day, as needed.
   2. The dose should not exceed 4 g/day.
   3. Ginger is often used for dysmenorrhea as well.

11. Shepherd’s purse, an astringent herb, has hemostatic properties, making it useful for reducing heavy menstrual flow. It has been approved for internal use in Germany for the symptomatic treatment of mild menorrhagia and metrorrhagia.
   1. The dose for tincture (1:5) is 3 mL four to six times per day. The tincture should not be more than 6 months old - it loses its styptic properties with age.
   2. There are no known contraindications or side effects (German Commission, 1998).

12. Yarrow has been valued since ancient times for its ability to staunch the flow of bleeding. Traditional herbalists often recommended it for excessive AUB. The dose is 2-4 g dried herb in capsules, three times per day.
   1. There are no reports in the scientific literature that yarrow interacts with known conventional medications. Pregnant women should avoid yarrow, as should persons allergic to plants in the Asteraceae family.
13. Red raspberry leaf is best known for use during pregnancy to tone the uterus and facilitate labor, but can also be used for pain relief and excessive bleeding during menstruation. The recommended dosage is one to two cups of tea, two to three times daily beginning with onset of menstruation.

Treatment

8. Clinicians are best equipped to identify optimal treatment modalities and appropriately counsel women regarding management of uterine fibroids when the full range of treatment options are known.
9. Expectant management is common, as many fibroids are relatively small and asymptomatic.
10. More aggressive treatment options for symptomatic leiomyomas include surgery, uterine artery embolization, ablative procedures, and medical management. There are several factors that must be taken into consideration when creating a management plan for benign uterine leiomyomas, such as the preference of the woman, severity of symptoms, fertility desires, and patient age.
   a. There is an increased, albeit rare, risk of uterine rupture in pregnancies following laparotomy and laparoscopic myomectomy involving uterine entry. A more common risk following myomectomy is an increased risk of cesarean, with rates as high as 50% following laparotomy myomectomy.
   b. Uterine artery embolization (UAE), also known as uterine fibroid embolization, is an emerging choice for symptomatic women desiring minimally invasive treatment of leiomyomas. Research from the FIBROID Registry, a large 3-year study of the short-term and long-term effects of UAE, demonstrates that women treated with UAE have significant improvements in both their symptomatology and health-related quality of life. However, 19% of women treated using UAE required additional invasive therapeutic interventions due to a return of their symptoms.
   c. Pharmacologic therapies are available - hormone-altering options - and are somewhat helpful. However, the use of these agents are contraindicated in women who are currently pregnant, or trying to conceive. For women aged at least 45 years, GnRh agonists demonstrably relieve menorrhagia and dysmenorrhea in greater than 80% of those using this therapy.
   d. The Mirena is another pharmacologic means of alleviating leiomyoma symptomatology. The therapeutic effect of the LNG-IUS is generally assumed to be associated with suppression of endometrial growth, resulting in a decreased amount and duration of uterine bleeding, thereby reducing menorrhagia and improving hemoglobin levels. Levonorgestrel therapy suppresses the proliferation of cultured primary leiomyoma cells, with subsequent apoptosis. Thus, the LNG-IUS has the potential to be efficacious in reducing leiomyoma size and proliferation, although research is necessary to substantiate the in vivo effectiveness of this treatment.

11. Midwives caring for women with leiomyomas must consider when independent management, consultation, co-management or referral is appropriate for any particular case.

REFERENCES: