

Michigan Sonographers Society Monthly Meeting

January 20, 2016 St Joseph Mercy Pontiac-Oakland

Guest Speaker: Dr. Judi Bender; Radiologist

Sponsor: Chris Poplars-Zonare Inc

Interesting Case Presentation: Baker College Students -Auburn Hills

Introduction: Liz Lawrence, President~Michigan Sonographers Society -----Liz thanked our sponsor Chris Poplars-Zonare Inc. for the wonderful dinner. As we have said in the past, we could not exist as a society without our generous sponsors. The sponsor lecture was postponed as Chris Poplars had an unforeseen circumstance that precluded his attendance.

Interesting Case Presentation: The Baker students presented two cases; the one that will be highlighted presented as follows: The case was a 28yo pregnant patient with vaginal bleeding and a BHcG of 1244 with RLQ pain. The students presented both transabdominal and transvaginal images that represented a right adnexal mass consistent with a right ectopic pregnancy. Images included the RUQ and LUQ to look for free fluid which represents a ruptured ectopic pregnancy and which assists the gynecologist in managing the ectopic pregnancy.

Guest Lecturer: Dr. Judi Bender; Radiologist (retired-Crittenton Hospital) Dr. Bender presented gynecological pathology starting with myometrial pathology; primarily highlighting these 4 areas of myometrial pathology: Leiomyoma • Lipoleiomyoma • Leiomyosarcoma • Adenomyosis .

Leiomyoma (fibroids) are the most common uterine neoplasm seen in up to 30% of woman over the age of 30. This is more often seen in African American women and is usually multiple. These may be asymptomatic, but may present with pelvic pain and uterine bleeding. Histologically, they are composed of spindle shaped muscle cells and fibrous connective tissue. Fibroids are estrogen dependent, and may increase in size during pregnancy, with Tamoxifen use (for breast cancer) and in post-menopausal woman who are on hormone replacement therapy. Most fibroids stabilize or decrease in size after menopause. Most are located within the uterus either: intramural submucosal or subserosal. They appear sonographically as an enlarged, heterogenic uterus with what appears to be a hypoechoic or heterogenic mass. They may demonstrate acoustic attenuation, focal calcifications or have a calcified rim.

Lipoleiomyomas are very rare, benign tumor that consist of variable amounts of smooth muscle and/or fibrous tissues. They appear as an echogenic, attenuating mass with no flow on color doppler. These are typically asymptomatic and do not require surgical removal.

Leiomyosarcomas are a very rare malignancy represented by the presence of endometrial glands and stroma within the myometrium. This malignancy accounts for less than 2% of uterine cancers; and may arise from a pre-existing leiomyoma. They are most often

asymptomatic~~although uterine bleeding may occur. They have the ultrasound appearance of a rapidly growing or degenerating leiomyoma with local invasion or distant metastases.

Adenomyosis is characterized by an enlarged uterus with a diffusely heterogenic myometrium and may present with pelvic pain, dysmenorrhea or menorrhagia. They may present on ultrasound with endometrial cysts, echogenic linear striations or echogenic nodules and an ill-defined endometrial border.

Endometrium Pathology: Reasons for post- menopausal bleeding primarily include: endometrial atrophy, endometrial hyperplasia, endometrial polyps, or endometrial carcinoma. Endometrial hyperplasia appears on US as a diffuse endometrium~~but may not involve the entire endometrium. Histologically this may present with cellular atypia. However 25% with atypia progress to cancer so this finding needs to be biopsied to determine malignancy. This pathology develops from unopposed estrogen stimulation hormone replacement, persistent anovulatory cycles, PCO (polycystic ovaries) and obesity. Endometrial polyps are overgrowths of endometrial tissue and these are typically benign. These may be diffuse, focal, pedunculated, and are best evaluated with sonohysterography. Endometrial Carcinoma: The most common gynecologic malignancy occurring in 3% of women in the U.S. Almost 80% of this type of cancer occurs in postmenopausal women. This accounts for less than 1.5% of cancer deaths in women because > 75% are contained in uterus when the diagnosis is made. Appearance of endometrial cancer: this cancer may resemble hyperplasia/polyps with a uniform, thickened endometrium. More commonly, the endometrium is heterogeneous.

Hydro/Hematometrocolpos is the accumulation of secretions and/or blood in the uterus and/or vagina with the location depending on the amount of obstruction. This condition is considered congenital when it is due to an imperforate hymen, vaginal septum, atresia or a rudimentary uterine horn. This can also be caused when acquired due to endometrial or cervical tumors or due to post-radiation fibrosis.

Ovarian pathology: Hemorrhagic cysts are caused by internal hemorrhage from cells lining functional cysts or from corpus luteal cysts; their appearance depends on age and amount of hemorrhage. They can appear as hyperechoic with posterior acoustic enhancement to having internal echoes to containing a fluid-fluid line. No flow is seen within cyst on color/spectral doppler. Theca-luteal cysts~~this category is the largest of the functional cysts and is associated with high levels of HCG and is seen in gestational trophoblastic disease and ovarian hyperstimulation syndrome with infertility drug therapy. These cysts are bilateral, multi-locular and are very large. Endometriomas are a localized form of endometriosis; they present in the ovary as a well-defined uni/multilocular cystic mass with diffuse low level internal echoes. They may have marginal echogenic nodules or a fluid-fluid level. They show little change in size/appearance over time with either no pain or chronic menstrual pain. Those measuring > 9 cm show <1% malignant transformation; they can cause decreased ovarian function and fertility issues. Polycystic Ovarian Disease (PCOD) is an endocrine disorder which causes elevated LH and depressed FSH levels which results in hypersecretion of androgens and chronic anovulation. This is a common cause of infertility and early pregnancy loss. These women are at an increased risk for Type II DM, CAD, CVA, HTN and Hyperlipidemia . These women present as thin menstruating woman to obese, hirsute amenorrhic females (i.e. Stein-Leventhal syndrome.)

Ovarian torsion is the partial or complete rotation of the ovarian pedicle on its axis which compromises the lymphatic and venous drainage causing edema and leading to a loss of arterial perfusion and infarction of the ovary. This may occur in normal ovaries or with an ovarian mass. More commonly seen in childhood/reproductive years with an increased risk during pregnancy

Mucinous cystadenocarcinomas: These account for 5-10% of primary ovarian neoplasms and the majority are seen in woman age 40-70. Up to 20% are bilateral. They present sonographically similar to mucinous cystadenoma but contain septum and nodularity and have spectral/color Doppler waveforms. There can also be pseudomyxoma peritonei secondary to intraperitoneal spread.

Conclusion of the meeting: Liz Lawrence thanked the attendees and reminded everyone that the next MSS Monthly meeting is Wednesday, February 17, 2016 at Providence Hospital-Southfield and the Guest Lecturer will be Janette Wybo, RDMS/RVT/RDCS; Program Coordinator DMS for Providence. Her topic will be tips/tricks: sonographic scanning secrets.



Respectfully submitted,

Julie Atkinson, RDMS/RVT; MSS Secretary