E-Posters

Ultrasound and Imaging in Gynaecology

EP7.01
Degeneration of fibroid in a perimenopausal woman – an unusual presentation
Seet, MJ; Chonkar, SP; Mathur, M
KK Women’s and Children’s Hospital, Singapore, Singapore

Background The diagnosis of degenerating uterine fibroid in a nonpregnant woman is often difficult. It usually occurs secondary to loss of blood supply caused by its rapid growth associated with pregnancy or oral contraceptive use. This case is remarkable in its presentation as degeneration of fibroid is extremely uncommon in a perimenopausal lady who is not on hormonal therapy.

Intraoperative finding revealed a large uterine fibroid, which had ruptured its capsule and was encapsulated with severe adhesions involving small bowel, transverse colon and omentum raising the suspicion of a leiomyosarcoma. Histopathology examination however reported a completely infarcted uterine fibroid with no increased in mitotic activity or abnormal mitotic figures.

Case A 55-year-old lady with three previous normal vaginal deliveries presented with severe suprapubic pain with pyrexia. She had irregular menses and her last menstrual period was 3 months ago. Physical examination revealed a tender pelvic mass measuring approximately 24 weeks in size. Urine pregnancy test was negative. Laboratory findings demonstrated normal tumour markers, normal leukocyte count and an elevated C-reactive protein. Ultrasound of the pelvis and a CT scan of the abdomen and pelvis showed a 12.0 cm mass arising from the posterior wall of the uterus with irregular margin inferiorly representing a fibroid with either degeneration or infarction, or less likely malignant changes and surrounding mesenteric inflammation. She was managed conservatively, discharged and planned for an elective total hysterectomy bilateral salpingo-oophrectomy and frozen section the following week. Intraoperatively, the specimen was sent for frozen section analysis, which revealed a benign leiomyoma with extensive necrosis. She developed postoperative ileus, managed conservatively and was discharged well on the sixth postoperative day.

Discussion This case illustrates that degeneration of uterine leiomyoma should be considered as one of the differential diagnoses for all women presented with abdominal pain and a large fibroid mass regardless of their hormonal status or age. In addition, when associated with a history of pain, irregular bleeding per vaginum or increase in the size of the fibroid in a perimenopausal or postmenopausal women a diagnosis of leiomyosarcoma should also be considered.

EP7.02
Outcome of antenatally detected renal anomalies
Chandran, JR; Mumtaz, K; Dasan, S; Devi, NU
Govt Medical College Kozhikode, Kozhikode, Kerala, India

Objectives To study the outcome of antenatally detected fetal renal tract anomalies by II/III trimester ultrasound and its correlation postnatally.

Methods Prospective longitudinal study between January and December 2009 conducted at Govt Medical college Kozhikode, Kerala, India. One hundred antenatal women with isolated renal anomaly in II/III Trimester were followed-up. Neonates were scanned at end of first week of life. On confirmation of anomaly, renal function tests, MCU and isotope scanning technetium-99 m-Dimercaptosuccinsinic acid [99mTc] (DMSA) or technetium-99m-diethylene triaminepentacetic acid [ 99mTc] (DTPA) were done as indicated. Postnatal follow-up ranged between 6 weeks and 8 months.

Results The incidence of fetal urinary tract anomalies was 0.75%. Eighty-eight percent were male babies, 45% had bilateral renal involvement. Hydronephrosis was the most common abnormality detected (79%) with good correlation with final diagnosis ($P = 0.00001$). On evaluation of babies with moderate and severe hydronephrosis, persisting abnormality was seen in 17.4% and 1.1% respectively. Twenty percent (19) of babies with severe abnormalities needed confirmatory tests and 10% (10) had elevated RFT ($P = 0.0092$) and UTI ($P = 0.001$). 8.6% (8) of babies needed surgical intervention (PUV-6, Grade V-VUR-1, Duplex collecting system-1).
Conclusions The majority of renal anomalies were found in male babies. Mild hydronephrosis resolved in 85%. Moderate and severe hydronephrosis was associated with pathology postnatal. Valve ablation in PUV and unilateral MCDK showed good prognosis.

**EP7.03**

**Diagnostic accuracy of outpatient hysteroscopy versus transvaginal sonography in the evaluation of endometrial pathology**

Jawad, I; Athanasias, P; Flemming, R; Pisal, N
The Whittington Hospital NHS Trust, London, United Kingdom

**Objectives** Ultrasound imaging has a pivotal role in the assessment of endometrial pathology. However, it is closely dependent on the operator’s skills and the quality of the scanning equipment. We compared the ultrasound diagnostic performance with the outpatient hysteroscopy findings on pre and postmenopausal symptomatic women that were referred to our department.

**Methods** Two hundred and forty-four women with menstrual irregularities or postmenopausal bleeding underwent outpatient hysteroscopy over 22 months. All underwent ultrasound assessment of the endometrial cavity prior to their outpatient hysteroscopy. We assessed the correlation between the ultrasound and hysteroscopy findings.

**Results** A total of 119 out of the 253 patients had hysteroscopy findings that did not correlate with their ultrasound assessments. These included 76 patients who had pathological findings on hysteroscopy that were not detected on ultrasound and conversely 43 patients who had a normal hysteroscopy despite focal pathologies being identified on ultrasound.

Of the 76 patients whose focal pathologies were not seen on ultrasound, 44 had uterine polyps, 18 had submucosal fibroids and 14 had endometrial abnormalities such as thickening or polypoid endometrium on hysteroscopy.

The remaining patients had ultrasound findings that correlated with their hysteroscopy findings, of which 91 patients underwent ultrasound scans that were normal and 43 patients had pathologies identified on both investigations. The 43 patients who had findings which correlated with their ultrasound scans included 20 patients with submucosal fibroids, 20 patients with uterine polyps and three patients with endometrial abnormalities.

In our study ultrasonography had a sensitivity of 36% for picking up focal pathologies, with a specificity of 68%. The positive predictive value of the investigation when compared to the gold standard hysteroscopy was 50%, with a negative predictive value of 54%. Also ultrasonography was better at confirming normal endometrium than at identifying focal pathologies.

**Conclusions** Transvaginal ultrasonography is an established method for the evaluation of the endometrium but as it depends enormously on the operator’s skills it can be misleading. In our study more than 50% of the women with endometrial polyps and fibroids were diagnosed accurately only after an outpatient hysteroscopy.

**EP7.04**

**Ultrasound diagnosis for cystic lesions of hysteromyoma**

Ben, L; Xu, X; Liu, F; Yang, H; Zhu, F
Ultrasound Department, the Second Hospital of Harbin, Harbin, China

**Objectives** Cystic lesions of hysteromyoma are not uncommon, and it is a secondary change in myoma. However, due to myoma size, location and extent of cystic difference, it is often misdiagnosed as other diseases, that affect the treatment of patients. Our aim was to probe the characteristics of cystic lesions of hysteromyoma on ultrasonic image and the main points of differential diagnosis.

**Methods** Fifty-four cases with cystic lesions of hysteromyoma proved by surgery and pathology have been compared and analysed with ultrasonic images and clinical symptoms. The results have been analysed retrospectively.

**Results** The coincidence rate of ultrasound with pathology was 92.6% (50 cases out of 54), among which single cyst was in 37 patients (68.5%, 37 cases out of 54), bicavity in 13 cysts (24.1%, 13 cases out of 54), and missed diagnosis with four cases (7.4%, 4 cases out of 54). The myoma diameter >5.0 cm was in 39 patients, (72.2%, 39 cases out of 54), bleed signal was discovered in 27 cases (81.8%, 44 cases out of 54) with vaginal colour Doppler ultrasound.

**Conclusions** (i) Cystic lesions of hysteromyoma behave complex and easily misdiagnosed. It’s normally divided into two types, based on the number and size of cysts: single-cavity type and multi-cavity type. The incidence of cystic lesions in hysteromyoma related to the size of the myoma, (ii) clinical symptoms and physical signs related to the site of the myoma in uterus, (iii) the cystic lesion of submucous myoma should be distinguished from that of hydatiform mole and of endometrial polyp, but that of hyposerousmyoma should be distinguished from that of pelvic and abdominal masses and (iv) ultrasound can demonstrate the characteristics of the cystic degeneration of hysteromyoma very clearly, correctly and easily. It is significantly helpful for clinical diagnosis and surgery.

**EP7.05**

**Comparison between 2D and 3D ultrasound in prediction of the oocyte maturity in ICSI**

Hegazy, AI; Rezk, AY; Farag, MA; Altraigey, AA
Banha University, Banha, Egypt

**Objectives** Evaluate the effect of hCG timing for oocyte maturation on the basis of ultrasound measurements made by 3D against those made by conventional 2D technique in relation to the number of mature oocyte collected.

**Methods** Sixty patients who underwent ICSI in Banha University Reproductive Centre and Banha IVF Centre were included in this study. Patients over 40 years old, with history of unilateral oophorectomy and ovarian hyperstimulation syndrome were excluded. All patients underwent both 2D and 3D ultrasound
examination at the same setting. Quality of the 3D image, time needed to perform the ultrasound study, number of follicles, follicular measurements, endometrial thickness and volume were all recorded and compared between both techniques. Data analysis was performed using squared correlation (R2) and Pearson’s correlation tests.

Results 2D and 3D follicular measurements were statistically correlated in (55.1%) of the cases. 3D examination showed good quality images in (71.7%) of the cases. 3D average examination time was 5.9 compared to 9.2 min in the 2D technique. Follicles in the volume range of (2–5 mL) at the day of hCG administration were statistically correlated to the retrieved mature oocytes with an explained variation percentage of (29%). Follicular volume of 5 mL as a cut off was representative to the number of mature oocytes retrieved.

Conclusion 3D ultrasound follicular monitoring is a time saving technique, provides a method of image quality control, and creates opportunities for developing new hCG administration criteria based on the follicular volume.

EP7.06
Relationship between cervical length and gestational age in different ethnic groups
Edirisinghe, DT1; Khalil, A2

1Queen Elizabeth Hospital, Woolwich, United Kingdom; 2University College London Hospital, London, United Kingdom

Background Studies have shown there is a variation in gestational age among different ethnic groups. Cervical lengths during early second trimester and mid second trimester are measured as common obstetric practice. This study looks at the correlation between cervical length and difference in gestational age in ethnic groups.

Objectives (i) To estimate the average gestational length of pregnant women (irrespective of the parity) who had first trimester ultrasound scan and who underwent spontaneous onset of labour in White, South Asian and Black racial groups in order to identify the discrepancy in average gestational age in ethnic groups (ii) To incorporate the average cervical length at 11–13+6 weeks and 20–22+6 weeks (P < 0.001) of gestation. There was a significant shortening (paired t test P = 0.02) of the mean cervical length at 11–13+6 weeks and 20–22+6 weeks in all three ethnic groups.

Conclusion This study has shown that black ethnicity has shorter gestational age which may be secondary to having shorter cervical length from the very early gestation. It also reinforced publish studies into variations in gestational age among different ethnic groups, by confirming the fact that Black ethnic group has short gestational age.

EP7.07
Endometrial thickness cut off for evacuation of retained product of conception (Al Rahba experience)
Nambiar, R; Ali, B; Saqib, S

RCOG, London, United Kingdom

Objective Studies of conservative management of first trimester miscarriage have questioned the need for post miscarriage curettage. Therapeutic decision making with transvaginal scan post miscarriage endometrial thickness in patients clinically thought to be incomplete miscarriage is often not clear. Our objective was to define the ultrasonographic endometrial thickness (USG ET) cut off for evacuation of retained pieces of conception (ERPC).

Methods Retrospective analysis of all 1ST trimester ERPC at Al Rahba Hospital from June 2009 to July 2011 was done. A total of 164 patients underwent ERPC. All cases were reviewed for preoperative USG ET and post ERPC histopathological examination. TVS was done to evaluate the maximum ET of the uterine cavity along the long axis of the uterus and features of retained products was noted. All cases without preoperative USG ET measurement were excluded from the study, therefore only 62 out of 164 cases were included in the study. The patients were divided into three groups: Group A: have retained products within endometrial cavity; Group B: endometrial thickness equal or more than 20 mm; Group C: endometrial thickness equal or <19.9 mm.

Post ERPC product was sent for HPE and the results were compared.
### Results

<table>
<thead>
<tr>
<th>Ultrasonicographic finding</th>
<th>Number of cases</th>
<th>Histopathological result +ve</th>
<th>Histopathological result –ve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retained product</td>
<td>18</td>
<td>18</td>
<td>8 (23.52%)</td>
</tr>
<tr>
<td>≥20 mm</td>
<td>34</td>
<td>26 (76.47%)</td>
<td></td>
</tr>
<tr>
<td>≤19.9 mm</td>
<td>10</td>
<td>1 (10%)</td>
<td>9 (90%)</td>
</tr>
</tbody>
</table>

### Conclusion

Transvaginal sonographic findings can be used as a deciding factor in the management of patients with 1st trimester miscarriage who need ERPC. Our proposed cutoff in clinically stable patients requiring ERPC is more than 20 mm.

### EP7.08

**Complex uterine arteriovenous malformation: a case report**

**Kumari, S; Aich, A; Chaudhuri, P; Muthu, S**

Wrexham Maelor Hospital, BCUHB, Wales, Wrexham, United Kingdom

**Background**

Arteriovenous malformation (AVM) of the uterus is extremely rare but potentially life-threatening. They commonly present as abnormal uterine bleeding which may be aggravated by uterine instrumentation often refractory to medical treatment.

**Case**

A 36-year-old woman was referred to our hospital with a history of continuous and heavy vaginal bleeding for a month. She had severe anaemia, lethargy and shortness of breath. She had had a normal delivery 3 years before and a termination of pregnancy 10 months ago. She was on oral contraceptive pills with light monthly bleeding. On admission she was haemodynamically stable with minimal bleeding. Her Haemoglobin was 6.1 g/dL.

A pipelle endometrial biopsy triggered heavy bleeding. She received 5 units of blood transfusion.

AVM was suspected on transvaginal ultrasound (TVUS) and CT scan. Complex uterine AVM was confirmed by Magnetic Resonance Imaging (MRI).

Considering the patient’s age and parity she underwent uterine artery embolization (UAE). One month later she was readmitted with intractable vaginal bleeding and received 4 units of blood transfusion. A total abdominal hysterectomy was performed as an emergency procedure.

**Discussion**

Management options depend on clinical scenario and patient preferences. AVM’s might be congenital or acquired. In a systemic review of acquired uterine AVM’s Peitsidis et al. reported that Ultrasound imaging was performed in 86% of the patients. It was combined with angiography in 51%. UAE was the most common treatment option performed on 59%, whereas Total abdominal hysterectomy was done in 29%. In 17% recurrence occurred after treatment with UAE and spontaneous resolution was noted in 6% of the patients.

UAE is safe and effective in a majority of the patients. Subsequent successful pregnancies have been reported in treated patients.

GnRh analogues have been used to reduce the size of AVM’s and increase effectiveness of UAE.

### EP7.09

Withdrawn by the author.

### EP7.10

**Isolated fallopian tube torsion: a case series**

**Kaur, K; Verger, C; Awala, A**

West Hertfordshire NHS Trust, Watford, United Kingdom

**Objectives**

Isolated fallopian tube torsion (FTR) is a rare event, with a reported incidence of 1:1,500,000.

**Methods**

Single centre report of four cases of FTR presenting at our single centre from 2010 to 2012.

**Results**

The first case was a 23-year-old lady presenting recurrent episodes of severe right sided abdominal pain. Ultrasound showed a small 4 cm ovarian cyst with a small echogenic area adjacent to it, apparently arising from cyst wall. Laparoscopy showed a right sided fimbrial cyst with a twisted right fallopian tube. Partial right salpingectomy was performed and histology reported a normal fallopian tube. The second case was a 28-year-old lady, 6 weeks pregnant, with a history of right sided lower abdominal pain. Ultrasound showed a heterotopic pregnancy. Laparoscopy revealed grossly enlarged right tube with haematosalpinx which was twisted on itself four times. Partial salpingectomy was performed, and histology reported a congested tube with no evidence of tubal pregnancy. Partial salpingectomy was performed, and histology reported a congested tube with no evidence of tubal pregnancy. The third case was a 53-year-old lady admitted with right iliac fossa pain, normal WCC and scan showed a normal uterus and ovaries with significant fluid in pouch of Douglas; appendicitis was not excluded. Laparoscopy showed bilateral hydrosalpinx, with torted and necrotic right tube; right salpingectomy was performed. Appendix also appeared to be inflamed and was removed. Histology showed fallopian tube infarction and lymphoid hyperplasia of appendix without inflammation. The fourth case was a 21-year-old lady with achondroplasia and previous appendicectomy who presented with...
right lower abdominal pain for 1 week, radiating to lower back. Pelvic scan showed 7 cm right ovarian hemorrhagic cyst. Laparoscopy showed right tube to be twisted twice, and a right ovarian cyst which was hemorrhagic but not torted. Tube conserving operation was performed by untwisting the tube, following which it turned pink. Right ovarian cystectomy was done.

**Conclusion** The incidence appears to be higher than as reported above. The cause of fallopian tube torsion is unknown. It can be associated with ovarian or parovarian cyst, hydrosalpinx, pregnancy, adhesions and pelvic congestion. Laparoscopy is the gold standard in treatment, as early diagnosis can spare the tube and spare future fertility.

**EP7.11**

**History, pelvic examination findings and mobility of ovaries as a sonographic marker to detect pelvic adhesions with fixed ovaries**

Marasinghe, JP; Senanayake, H; Saravanabhava, N; Arambepola, C; Condous, G; Greenwood, P

1University Obstetrics and Gynaecology unit, National Hospital, Colombo, Sri Lanka; 2Department of Community Medicine, Faculty of Medicine, University of Colombo, Colombo, Sri Lanka; 3Early Pregnancy and Advanced Endosurgery Unit, Nepean Centre for Perinatal Care, Nepean Clinical School, University of Sydney, Sydney, NSW, Australia; 4James Paget University Hospitals NHS Trusts, Great Yarmouth, United Kingdom

**Objective** To compare the performance of history and examination findings combined with transvaginal ultrasound (TVS) 'soft marker' evaluation of ovarian mobility for the prediction of fixed ovaries secondary to endometriosis at laparoscopy.

**Methods** This was a prospective observational study performed at the University Gynecology unit; National Hospital of Colombo Sri Lanka. Women who were scheduled for laparoscopic assessment of their pelvis to investigate subfertility or chronic pelvic pain were enrolled.

All women had history evaluating for dysmenorrhoea and dyspareunia, vaginal examination and detailed presurgical TVS. TVS was used to assess 'soft marker' of ovarian mobility. 'Fixed' ovaries on ultrasound were defined as one or other of the ovaries being fixed or adherent to the internal iliac artery or pelvic side wall laterally or to the uterus medially. These findings were compared with 'fixed' ovaries confirmed at laparoscopy.

**Results** A total of 106 patients were analysed. Mean (SD) age was 33.3 (5.1) years. Sensitivity, specificity, positive (PPV) and negative (NPV) predictive values (PV) of each of the screening methods against laparoscopy in detecting endometriosis were as follows: dyspareunia (45.9%, 76.8%, 51.5%, 72.6%); dysmenorrhoea (75.7%, 69.6%, 57.1%, 84.2%); positive vaginal examination (73%, 88.4%, 77.1%, 85.9%); fixed ovaries with TVS (78.4%, 94.2%, 87.9%, 89%); and a combination of history, examination findings and detection of fixed ovaries in TVS (91.9%, 60.9%, 55.7%, 93.3%).

**Conclusion** A combination of clinical and TVS based 'soft marker' of ovarian mobility provides a valid method for identifying fixed ovaries secondary to endometriosis.

**EP7.12**

**Uteroenteric fistula after uterine artery embolisation (UAE) for fibroid uterus: a case report**

Kukreja, SM; Jones, SE; Nicholson, T; Beckett, VA

1Bradford Royal Infirmary, Bradford, United Kingdom; 2Leeds Teaching Hospitals, Leeds, United Kingdom

**Background** Uterine artery embolisation (UAE) is frequently being used as an alternative to surgery in women with symptomatic fibroids who want to preserve their uterus. In appropriately selected patients, it has good success and few complications. We describe a case complicated by a jejuno-uterine fistula post UAE.

**Case** A 47-year-old nulliparous woman of Afro-Caribbean origin presented with a large uterus (equivalent in size to a full term gravid uterus) and menorrhagia. MRI revealed a uterus markedly enlarged with multiple fibroids - the largest measuring 11 cm. She underwent an uncomplicated uterine artery embolization (UAE).

Two weeks after the procedure, she needed admission for small bowel obstruction. Laparotomy revealed multiple small bowel loops adherent to degenerating uterine fibroids. These adhesions were released and she recovered.

Three months after the original procedure, she presented with a history of copious amounts of malodorous vaginal discharge, causing significant distress. Expectant management failed to resolve symptoms. A follow-up MRI revealed a large necrotic fibroid within the uterine cavity. She subsequently had hysteroscopic resection of the submucosal degenerated fibroid on three separate occasions. At the fourth planned attempt, on examination under anaesthesia, excoriated vulval skin and a vivid yellow vaginal discharge was seen. Hysteroscopy revealed a relatively normal uterine cavity with no fibroids. A CT fistula study confirmed the clinical suspicion of a fistula between the small bowel fistula and the uterus. After adequate counselling, a couple of days later, the woman underwent a hysterectomy, bowel resection and re anastomosis.

**Discussion** There are only a few reported cases of bowel obstruction and utero-enteric fistula after UAE. However it is important to be aware of these complications which may result in the patient presenting remote from the primary event – maybe even to a different speciality.

**EP7.13**

**Withdrawn by the author.**
EP7.14
A surgical or medical approach? A dilemma in the management of perianal endometriosis
Faiza, Y; Samyraju, M; Gumma, A
Peterborough and Stamford Hospital NHS Trust, Peterborough, United Kingdom

Background Perianal endometriosis is a rare form of extrapelvic endometriosis. Although the exact aetiology is unclear, the movement of endometrial cells into open episiotomy wounds or perineal tears during vaginal delivery, manual removal of placenta, or postpartum suction curettage may contribute to the mechanism. The patient may have been investigated by different specialties before the correct diagnosis is confirmed histologically.

Case We present a case of perianal endometriosis in a 30-year-old patient managed by a multidisciplinary team; where she initially presented to the colorectal surgeon with a 2 year history of a painful perianal ‘cyst/haemorrhoid-like lump’. On rectal examination, a nodular mass was identified at 10 o’clock position. Sigmoidoscopy was unremarkable. Proctoscopy showed 1st degree haemorrhoids. MRI of the anus confirmed a nodular low signal tissue. This nodular mass-like structure was visible on endoanal ultrasound scan as an irregular low signal tissue. This mass is separate from the anal sphincters and the vagina. Also, the patient was thoroughly counselled about the surgical option.

Discussion Treatment of perianal endometriosis can present as a challenge as one needs to weigh up the risks, benefits of surgery versus no surgery, taking into consideration her age, general health and desires for fertility. The possible risks of a persistent wound, rectovaginal fistula, infection and further complications were explained to our patient. The benefit of surgery, in the absence of a biopsy can exclude malignancy. However, inadequate surgery can result in incomplete removal, future recurrence and need for additional surgery. On the other hand, a large excision can be curative, but increases the risk of anal incontinence, amongst other complications. Medical management with GnRh agonists can be considered as alternative to a surgical approach or postoperatively for further management.

Conclusion Our case demonstrates the varied presentations of endometriosis and the importance of identifying perianal abscess. We believe optimal management should include gynaecological, surgical and radiological expertise. A preoperative endosonography and MRI can assess the extent of the disease, and biopsy should be considered to exclude malignancy for patients managed with hormonal treatment alone.

EP7.15
Early ultrasound and MRI diagnosis of a non-communicating rudimentary horn pregnancy and elective surgical management at 14-weeks gestation: a case report and literature review
Rickard, HJ; Hutt, S; Hutt, R; Diab, Y
Royal Surrey County Hospital NHS Foundation Trust, Guildford, United Kingdom

Background The incidence of uterine horn pregnancy is estimated as being in the region of between 1 per 76 000 and 1 per 140 000 pregnancies and are most often diagnosed postrupture during the mid trimester as ultrasound sensitivity to diagnose is very poor (30%). This can lead to massive maternal haemorrhage and morbidity. Preferable management is diagnosis prerupture so that the patient can be counselled and managed electively, thus avoiding the significant associated morbidity.

Case We report the case of a 39-year-old woman known to have a bicornuate uterus and two previous term caesarean section deliveries who was found to have an empty uterine cavity and a pregnancy in the right rudimentary uterine horn at her first trimester ultrasound scan. This was confirmed with a detailed MRI scan. Elective management by laparotomy, surgical termination of pregnancy and excision of the uterine horn was performed at 14 weeks of gestation following extensive counselling.

Conclusion The case demonstrates that detailed imaging performed by an experienced practitioner plus MRI imaging in a patient with a known Mullerian tract abnormalities has led to timely management. We look further at the evidence for the use of these imaging modalities and the challenges of making an early diagnosis.

EP7.16
Transvaginal ultrasound scan in the preoperative management of suspected deep infiltrating endometriosis
Andrews, V1; Leung, L2; Banerjee, S1
1Ashford and St Peters Hospitals NHS Foundation Trust, Chertsey, United Kingdom; 2St Georges Hospital, London, United Kingdom

Objective Deep infiltrating endometriosis (DIE) is a condition where endometrium like tissue is implanted under the peritoneal surface, and is associated with pelvic pain and subfertility. The gold standard for diagnosing DIE is laparoscopy. Often an initial diagnostic laparoscopy is undertaken prior to definitive surgery. Laparoscopies are not without surgical morbidity and potential risks. Our objective was to determine whether transvaginal ultrasound (TVUS) undertaken by a trained gynaecologists can identify DIE preoperatively.

Methods We carried out a retrospective audit. The notes of 51 patients with suspected DIE on TVUS, carried out between 2008 and 2012, were compared with their laparoscopic and histological findings.

Results Fifty-one ultrasound scans were performed which suggested DIE. After counselling 36 of these women subsequently had laparoscopies. A TVUS scan detected the majority of DIE cases preoperatively, except when it involved the right uterosacral ligament (Table 1). Similarly a novel laparoscopic finding of DIE was unusual, unless it involved the right uterosacral ligament (Table 2).

Histology was available for 34 patients and confirmed the diagnosis in 26 (76%) cases.

Conclusions TVUS by a trained gynaecologist can identify DIE prior to surgery, and therefore should be undertaken.
Mexico, Mexico; Hospital General de Mexico/Servicio de Patologia, Concentracion Issemym Satelite, Ciudad Satelite, Naucalpan, Estado de Mexico, DF, Mexico

On clinical examination, a firm, no tender abdominal mass, which filled the abdominal cavity, was noted. Positive Giordano’s sign bilaterally. On vaginal examination, the uterus could not be felt separately from the mass. Her CA19-9 and CA125 were elevated. The CT scan showed a large abdomino-pelvic mass from uterus compressing bladder, sigmoid colon with displaced kidneys, ureters and transverse colon. On laparotomy a retroperitoneal tumour was seen arising from the uterine isthmus. Both ovaries were hypotrophic. The patient underwent a total abdominal hysterectomy with bilateral salpingo-ophorectomy. Grossly, the tumor arising from isthmus weighed 8100 g, measured 330 × 290 × 250 mm. The endometrium of 0.2 mm. Both ovaries and fallopian tubes were normal. The histology showed proliferation of giant smooth muscle cells with <2 mitosis/10 fields. There was no postoperative bleeding. Her post-surgical course was uneventful with negative tumour markers. She was discharged from the hospital on the sixth postoperative day.

**Discussion**  Cellular leiomyoma tend to be large in size and solitary, and although has a clinical presentation and genomic expression similar to that of a leiomyosarcoma, has a benign prognosis. CT scan can distinguish between benign and malignant varieties. CA125 and CA19-9 can be elevated in non-neoplastic diseases because of peritoneal mechanical irritation from a large mass. Symptomatic uterine leiomyoma are the primary indication for approximately 30% of all hysterectomies.

**Conclusion**  The treatment of fast growth and large uterine myomas is resection through classical hysterectomy.

---

**E-Posters**

**EP7.17**

**Large uterine leiomyoma of giant cells (8.1 kg): a case report**

_Castaneda Valladares, F1; Morales Palomares, M2; Urias Soto, F2; Gutierrez, E2; Lopez Juarez, J2; Sanabria Padron, VH2_

1Universidad Autonoma del Estado De Mexico/Hospital de Concentracion Issemym Satelite, Ciudad Satelite, Naucalpan, Estado de Mexico, Mexico; 2Hospital General de Mexico/Servicio de Patologia, Mexico, DF, Mexico

**Background**  Leiomyoma is the most frequent pelvic tumor and the most common tumor in women with the highest prevalence occurring during the fifth decade of woman’s life. Giant uterine leiomyoma is a very rare neoplasm and presents a great therapeutic and surgical challenge for gynecologist.

**Case**  A 44-year-old nulliparous female with abdominal colicky pain radiated to the left flank, urgency and hesitancy to void, nausea and constipation. She had a past medical history of menorrhagia, dyspepsia, 5 kg weight loss along with abdominal distension and minimal effort dyspnea during the past 3 months. Menarche: 12 years old, LMP: 15 February 2012.

---

**Table 1 Patients with suspected DIE on ultrasound confirmed laparoscopically**

<table>
<thead>
<tr>
<th>Ultrasound findings</th>
<th>Confirmed laparoscopically n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left ovarian endometrioma (n=9)</td>
<td>7 (78)</td>
</tr>
<tr>
<td>Right ovarian endometrioma (n=9)</td>
<td>6 (67)</td>
</tr>
<tr>
<td>Left uterosacral ligament (n=17)</td>
<td>13 (76)</td>
</tr>
<tr>
<td>Right uterosacral ligament (n=13)</td>
<td>5 (38)</td>
</tr>
<tr>
<td>Rectal vaginal nodule (n=17)</td>
<td>12 (71)</td>
</tr>
<tr>
<td>Bladder (n=2)</td>
<td>2 (100)</td>
</tr>
</tbody>
</table>

**Table 2 Patients with DIE at laparoscopy that was not detected by ultrasound**

<table>
<thead>
<tr>
<th>Laparoscopic findings</th>
<th>Undetected on ultrasound n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left ovarian endometrioma (n=8)</td>
<td>1 (13)</td>
</tr>
<tr>
<td>Right ovarian endometrioma (n=7)</td>
<td>1 (14)</td>
</tr>
<tr>
<td>Left uterosacral ligament (n=187)</td>
<td>5 (28)</td>
</tr>
<tr>
<td>Right uterosacral ligament (n=15)</td>
<td>10 (67)</td>
</tr>
<tr>
<td>Rectal vaginal nodule (n=16)</td>
<td>4 (25)</td>
</tr>
<tr>
<td>Bladder (n=2)</td>
<td>0</td>
</tr>
</tbody>
</table>

**EP7.18**

**Ovarian cancer investigations – by guidelines?**

_Hussain, Z; Limdi, S_

Pennine Acute Hospitals NHS Trust, Bury, United Kingdom

**Background**  Extensive guidelines exist regarding investigation in patients suspected with ovarian cancer. NICE recommends ultrasound scan as initial investigation followed by CT scan for staging. MRI-scans are not routinely indicated for assessment. The Royal College of Obstetricians and Gynaecologists recommend transvaginal ultrasound due to their increased sensitivity. Regional Cancer Network guidelines recommend CT reports be in line with the FIGO staging system also mentioning hydrenephrosis. It is also recommended to check CA125 levels in primary care for these patients and calculate Risk of Malignancy Index I (RMI-I) after ultrasound.

**Objective**  The aim of our retrospective audit was to determine whether the above guidelines were being followed at our Trust in patients suspected with ovarian cancer.

**Methods**  Data were obtained from Regional Cancer Registry and information collected from the hospital letters system, Pathology system and PACS/CRIS.

**Results**  There were 29 new cases of ovarian cancer in 2011 with 13 patients suspected of ovarian cancer at presentation. Only 3/8 (38%) patients suspected of ovarian cancer in primary care had CA125 levels checked by GPs. All patients had CA125 checked eventually in secondary care.
Twelve patients had ultrasound scan initially; two were transvaginal and one patient had CT as first investigation. Eight patients had an MRI scan as second investigation to characterise ovarian masses detected on ultrasound scan. Four (31%) patients had investigations as per recommendation (US-CT+) MRI-scan) and six patients had ultrasound initially, then MRI (for mass characterisation) followed by CT scan, which would also be as per guidelines. Guidance was followed in 77% of patients. Twenty-six CT-scans were performed for 29 patients, 17 reports (65%) met the reporting criteria.

Only 1/29 (3.4%) patient had RMI-I score formally documented, others were calculated informally during MDT. Ninety-three percent of all patients were referred to Specialist MDT.

16/29 patients had sampling investigations performed, from which the following tumour types were identified: Granulosa cell tumour, clear cell carcinoma, adenocarcinoma, complex mucinous, papillary serous carcinoma, and endometrioid adenocarcinoma.

**Conclusion** This data were presented to Radiology and Gynaecology audit and action planned based on conclusions drawn. The recommendation of training GPs has been made through GP trainees (at gynaecology meeting) to ensure initial investigations (CA125 levels and ultrasound) are ordered sooner for swift referral to gynaecologists and Specialist MDT for management. Though the imaging guidance was followed in a good proportion of patients, need for better compliance has been reiterated to the Gynaecologists. Radiologists are encouraged to abide by FIGO reporting and welcome feedback on reports.

**EP4.19**
Withdrawn by the author.

**EP7.20**
An unusual presentation of endometriosis: a case report
Arulpragasam, KA; Drews, F; Sivasuriam, AS
Cwm Taf Health Board – Prince Charles Hospital, Merthyr Tydfil, United Kingdom

**Case** A 34-year-old female presented with an 18 months history of a weeping mass and progressive tenderness over the right edge of her caesarean section scar performed 8 years ago. An USG of her pelvis demonstrated a 34 × 17 × 22 mm mixed echo mass with increased blood flow on Doppler examination. The appearances were suggestive of an inflammatory mass. It was further investigated with a MRI which revealed a 5 × 4 × 4 cm area of abnormal signal in the subcutaneous fat. This was initially thought to be active granulation tissue.

Subsequently she underwent a wide local excision of the mass by the plastic surgery team. Interestingly, the histology confirmed endometriosis.

**Conclusion** This case highlights an exceptionally unusual presentation of endometriosis and the need for multidisciplinary input for its management.

**EP7.21**
An unusual adnexal mass
Deeny, M; Deonarine, P; Rankin, M
NHS Greater Glasgow and Clyde, Glasgow, United Kingdom

**Case** A 52-year-old woman was referred with postmenopausal bleeding after 3 years on continuous combined hormone replacement therapy with estradiol 1 mg and norethisterone acetate 1 mg.

She was seen at our one stop clinic. She was otherwise well with no past medical history except a period of atypical chest pain 3 years prior with no abnormal exercise tolerance, electrocardiography or echocardiography findings. Transvaginal ultrasound demonstrated a normal uterus, endometrial thickness 2 mm, and bilateral multicystic fluid filled masses that could not be defined separate from the ovaries. Carbohydrate embryonic antigen was 7 kU/L.

MRI was performed. A tailored examination was performed with additional lumbar spine sequences to ascertain the nature of patient's pathology. The uterus was postmenopausal and antverted. No endometrial thickening or masses were seen. Both ovaries were identified and were post menopausal and atrophic.

Bilateral cystic structures were identified deep in the pelvis and posterior to the uterus. These were contiguous with the CSF spaces extending through the sacral foramina with associated widening of the sacral foramina, suggesting they were of longstanding. The cysts followed the signal characteristics of CSF on all imaging sequences.Appearances were felt to be consistent with bilateral multilevel perineural and Tarlov cysts. These have given the spurious impression of bilateral adnexal masses on transvaginal scanning.

These cysts can be associated with neurofibromatosis, but not in the case of this patient.

The investigation of postmenopausal bleeding in our unit is carried out in line with SIGN guideline 61. It is known that incidental findings can be made, and abnormalities of non gynaecological organs may be noted. We present an unusual case. Ultrasound and MR images will be available for poster or oral presentation.

**EP7.22**
Severe appendicular endometriosis mimicking appendicitis as a cause of acute abdomen: a case report
Tan, A; Nicholson, Y; Kabukoba, J
Birmingham City Hospital, Dudley Road, Birmingham, United Kingdom

**Objectives** Endometriosis affects up to 17% of women of reproductive age and intestinal endometriosis affects 3–12% of all gynaecological patients. Several studies have shown up to 2.5% of such patients had surgical treatment due to acute abdominal signs such as severe pain and haematochezia. We report a case of appendicular endometriosis in a woman with signs of an acute
abdomen who had an emergency surgery and histopathology confirmed appendicular diverticulitis and serosal endometriosis.

**Methods** A retrospective case note review was performed to collect data on inpatient management, intraoperative care and postoperative outcomes.

**Results** A 41-year-old Caucasian woman with three normal deliveries attended hospital due to right iliac fossa pain (RIF) of 10/10 severity and constipation. She had a previous history of pelvic inflammatory disease that was treated. Her menstrual cycle was regular and her last period was 3 weeks ago. Her smear test was normal and she was not using any contraception. On examination, there was rebound tenderness on RIF with guarding. There was also cervical excitation and right adnexal tenderness on pelvic examinations but no signs of bleeding or discharge. On rectal examination, there were external haemorrhoids. Her urine dipstick was normal and her pregnancy test was negative. Her ultrasound scan showed a 3.7 × 1.5 cm thick walled tubular shape medial to the right ovary and free fluid in the pelvis of 5.9 × 5.4 × 2.4 cm. Despite having normal blood tests (mainly WCC 8.3 × 10³ cells/µL, Neutrophils 5.13 × 10³ cells/µL and amylase 102 units/L) except a mildly raised CRP of 21 mg/L, she was conservatively managed with analgesia and antibiotics. However, her clinical condition continued to deteriorate and she had a CT scan that showed a large complex pelvic cystic lesion of 10 × 12 cm posterior to the uterus from the right ovary. All her tumour markers except a raised CA125 (95 U/mL) were normal. She subsequently had an emergency laparotomy which showed an extensive frozen pelvis with a right tubo-ovarian mass involving the sigmoid colon, appendix and bladder. She ended up having a total hysterectomy, bilateral salpingo-oophorectomy and appendicectomy. She had an uneventful recovery and was discharged on Day 4 postoperative. Histopathology confirmed an extensive congested serosal surface, diverticulitis and foci of endometriosis on the appendix.

**Conclusions** Appendicular endometriosis should be considered as a differential diagnosis when assessing women of reproductive age with acute abdominal signs.

**EP7.23**

**Lipoleiomyoma of uterus: a case report in a premenopausal woman and review of literature**

*Ilangoan, K; Chodankar, R; Carter, C; Narvekar, N*

King’s College Hospital, London, United Kingdom

**Background** Lipoleiomyoma of the uterus is a rare soft tissue tumour of the uterus with a reported incidence of 0.03–0.2%. In almost all the cases the diagnosis is postoperative following histological analysis of hysterectomy specimen in a peri or postmenopausal woman. We present preoperative diagnosis and surgical treatment of a rare case of lipoleiomyoma of the uterus in a premenopausal woman.

**Case** A 36-year-old nulliparous woman presented with heavy menstrual bleeding and anaemia. A lipoleiomyoma of the uterus was diagnosed based on ultrasound findings of enlarged 18 week size uterus containing a 10 cm well defined homogenous hyperchoic mass within anterior myometrium with poor Doppler flows. The woman underwent removal of tumour through a lower transverse abdominal incision and a vertical uterine incision. The tumour was yellow in appearance with poorly defined surgical planes and due to its soft fragile nature retraction was by hand rather than using a traumatic grasper. The uterine incision was closed in two layers. Blood loss was minimal and she made good postoperative recovery. Histology confirmed a benign lipoleiomyoma.

**Discussion** Seventy-eight cases of lipoleiomyoma of the uterus have been reported in the last 30 years; the average age of diagnosis is postmenopausal [57 years (range 29–92)] which suggests that these tumours are very slow-growing, largely asymptomatic and do not regress following menopause. The histological diagnostic criteria for adipocyte content and distribution are ill-defined and the underlying etiopathogenesis is poorly understood. In the rare instance where preoperative diagnosis has been made based on CT and/or MRI imaging, the patients have been subjected to hysterectomy or radical surgery.

We relied entirely on typical ultrasound appearances of the tumour and the scan-based preoperative diagnosis helped in surgical planning especially avoiding a laparoscopic removal which may have been complicated by difficulty in retraction and identification of surgical planes.

**Conclusion** This case reassures that this rare tumour can be diagnosed with reasonable accuracy preoperatively using ultrasonography and the option of safe conservative surgery especially in younger women who wants to retain their fertility.

**EP7.24**

**Spontaneous perforation of uterus secondary to necrotic leiomyoma and pyometra: a rare presentation in a postmenopausal woman**

*Palmer, CE; Roberts, A; Semple, D*

Countess of Chester Hospital, Chester, United Kingdom

**Case** A 63-year-old woman with Still’s disease, CKD and hypertension presented to A&E with diarrhoea, vomiting, abdominal pain and signs of sepsis. A provisional diagnosis of diverticulitis was made and she was managed conservatively by the surgical team. Over the following 5 days she became more unwell with abdominal distension, guarding and early signs of peritonitis. An urgent CT of her abdomen and pelvis revealed pneumoperitoneum, free fluid in the abdomen and an enlarged uterus thought to be secondary to a uterine fibroid. The patient was taken to theatre for an emergency laparotomy for a suspected bowel perforation.

Purulent free fluid was observed within the peritoneal cavity with several fibrous adhesions and interloop abscesses. The uterus contained a 1.5 cm perforation on the left side of the fundus with an associated pyometra. Full exploration of the abdominal cavity confirmed the absence of bowel perforation. The uterus and cervix were examined and biopsies taken. The endometrial biopsy later ruled out any evidence of malignancy, viral or bacterial infection.
Postoperatively the patient required a prolonged stay on the intensive care unit (ITU). Twelve days later she continued to deteriorate despite multiple courses of antibiotics. Following discussions with the patient and her family, a multidisciplinary decision was made to return to theatre and perform a hysterectomy and salpingo-oopherectomy. At laparotomy the uterine perforation was still present with an obvious intrauterine necrotic mass. A sub-total hysterectomy was performed due to the patient’s poor intraoperative condition. Histology of the uterus confirmed an infarcted and necrotic benign leiomyoma.

Despite overall improvement from the second operation, the patient remained in hospital for 3 months with several postoperative complications including; pelvic abscess (drained by IR), right sided heart failure, paralytic ileus and a wound infection. She was discharged to intermediate care for further rehabilitation.

**Discussion** As far as we are aware, this is the second reported case of spontaneous uterine perforation secondary to an infarcted leiomyoma in a postmenopausal woman. It is estimated that uterine perforation due to pyometra is 0.01–0.5%, more commonly caused by malignancy and pathologies resulting in cervical occlusion (radiation cervicitis, atrophic cervicitis, polyps, infection, congenital anomalies). There are rare reports of uterine perforation secondary to red degeneration of fibroids in pregnancy, however leiomyoma infarction is even less reported.

**Conclusion** Uterine perforation should be considered in women with an unexplained pneumoperitoneum. Where intra-abdominal sepsis is caused by a perforated pyometra, early surgical intervention is required.

**EP7.25**

**IOTA simple descriptors (SD) or simple rules (SR) as a triage test in patients with ovarian tumours: subsequent value of CA125, HE4 or ROMA in clinical reality?**

Kaijser, J¹; Van Gorp, T²; Van Holsbeke, C³; Sayasneh, A⁴; Vergote, I¹; Bourne, T⁴; Van Calster, B⁵; Timmerman, D¹,⁵

¹Department of Obstetrics and Gynecology, University Hospital KU Leuven, Leuven, Belgium; ²Department of Obstetrics and Gynecology, MUMC+, GROW – School for Oncology and Developmental Biology, Maastricht, Netherlands; ³Department of Obstetrics and Gynecology, ZiekenhuisOost-Limburg, Genk, Belgium; ⁴Department of Cancer and Surgery, Imperial College London, Hammersmith Campus, Du Cane Road, London, United Kingdom; ⁵Academic Department of Development and Regeneration, KU Leuven, Leuven, Belgium

**Objective** In daily clinical practice most ovarian tumours can receive rather easily an instant diagnosis without the use of sophisticated prediction models based on logistic regression. IOTA SD offers a reliable diagnosis in almost half (43%) of all tumours, whereas SR offers a reliable diagnosis in 73% of all cases. In this study we assessed the added value of biomarkers (HE4, CA125) or ROMA as secondary tests in the remainder of ovarian tumours.

**Methods** This study included women with a pelvic mass scheduled for surgery enrolled in a prospective diagnostic accuracy study. Experienced ultrasound examiners, general gynecologists and trainees performed preoperative transvaginal ultrasonography (US). Serum biomarkers were taken prior to surgery. Median time difference between US and blood sampling was 8 days; 95%CI: 6.9–13.0 days. Sensitivity and specificity were estimated of four different strategies (biomarkers in total cohort, SD + biomarkers, SR + biomarkers and SR + SD + biomarkers). Final outcome was histology of removed tissues and surgical stage if relevant.

**Results** The final database comprised 360 adnexal tumours. Malignancy rate was 40%. SD were applicable in 49% of all cases with a sensitivity of 100% and specificity of 97.1%. SR were applicable in 81% and had 99.1% sensitivity and 92.9% specificity. Sensitivity and specificity of four different strategies using ROMA, HE4 and CA125 are displayed in Figures 1 and 2, respectively. In contrast a strategy using subjective assessment of expert examiners as second stage test after SR yielded the best overall test performance (sensitivity 96.5%, specificity 90.3%).

**Conclusion** This study demonstrates possible utility of biomarkers or ROMA as secondary tests after the use of simple ultrasound descriptors or rules with acceptable sensitivities ≥90% in settings where expert ultrasonography is not readily available.
EP7.26
The management of suspected ovarian masses in premenopausal women in a DGH setting
Baker, C; Pasipanodya, T; Dwivedi, R
Royal Bournemouth & Christchurch Hospital, Bournemouth, United Kingdom

Background The incidence of symptomatic ovarian masses and cysts in premenopausal women is approximately 1:1000 increasing to 3:1000 at the age of 50.

Simple cysts <5 cm should regress in 2–3 cycles without intervention and can be managed conservatively. Borderline tumours should be suspected, as 20% of ovarian tumours appear as simple cysts. However in the majority there are other suspicious findings.

Objectives To evaluate (i) the role of USS in assessment of suspected ovarian masses (ii) use of the IOTA simple rules in a DGH setting (iii) correlation of simple rules with histological diagnosis

Method We performed a retrospective data collection and analysis of premenopausal women presenting to RBH with ovarian masses over 10 years. Ultrasound scan reports were reviewed and classified according to the IOTA simple rules which were then correlated with histological diagnosis.

Results Ultrasound reports and histological diagnosis were recorded in 48 cases. Applying IOTA simple rules, seven had M rules, 21 had B rules and 20 were inconclusive. For malignant diagnosis, sensitivity of the IOTA simple rules was 100% with a specificity of 80.8%. For benign disease, sensitivity of the IOTA simple rules was 80.8% with a specificity of 28.6%.

Discussion Ultrasound scanning is used routinely in the assessment of symptomatic premenopausal women with suspected ovarian masses. The sensitivity of the IOTA simple rules in correctly identifying malignant cysts in this study was 100%, however this included only two cases. There were five false positive results, resulting in a specificity of 80.8%. All these were diagnosed histologically as benign teratomas, notoriously difficult to differentiate from malignant cysts on ultrasound scan. This likely also accounts for the low specificity of the rules in correctly identifying benign disease in our study. The IOTA simple rules have been in use since 1999, however in our DGH setting there was a vast array of ultrasound scan reporting styles. Forty-two percent of scans were classified as ‘inconclusive’ according to IOTA simple rules even if the report stated a likely specific benign pathology – the particular features were not described.

Conclusions There is a need for standardisation of ultrasound reporting of ovarian masses within our DGH setting. The IOTA simple rules provide a framework in this regard to encourage reporting of specific features seen on ultrasound scan. A larger sample size would enable further evaluation of the correlation between IOTA simple rules and histological diagnosis.

EP7.27
Diagnostic performance of IOTA Logistic Regression (LR2) model compared to the Risk of Malignancy Index to characterize adnexal masses: a multicentre prospective study
Sayasneh, A1; Prieisler, J1; Wynants, L1,2; Kaijser, J2; Johnson, S3; Stalder, C1; Husicka, R1; Raslan, F4; Ghaem-Maghami, S1; Van Calster, B2; Timmerman, D2; Bourne, T1,2
1Imperial College London, London, United Kingdom; 2KU Leuven, Leuven, Belgium; 3Princess Anne University Hospital, Southampton, United Kingdom; 4West Middlesex University Hospital, London, United Kingdom

Objectives To evaluate the diagnostic performance of the IOTA Logistic Regression (LR2) model for preoperative characterization of ovarian masses when ultrasonography is performed by examiners with different background training and experience. To compare the LR2 diagnostic performance to the conventional Risk of Malignancy Index (RMI).

Methods A 2 year prospective multicenter cross-sectional study. Thirty-six (level II) ultrasound examiners contributed in three UK hospitals. Transvaginal ultrasonography was performed using a standardised approach. The final outcome was findings at surgery and the histological diagnosis of surgically removed masses. Area Under the Curve (AUC) was calculated for each test.

Results One thousand one hundred and sixty-five women with adnexal masses underwent trans-vaginal ultrasonography, 301 had surgery. Prevalence of malignancy was 31% (n = 92). For the whole sample LR2 AUC was 0.94 compared to 0.91 for RMI with a difference of 0.04 (95% CI: −0.00680 to 0.0795) (P = 0.09) (Figure 1). In the premenopausal group (62%), the LR2-RMI AUC difference became higher (0.1) (P = 0.05) with AUC of 0.92 for LR2 and 0.82 for RMI. In the postmenopausal group (38%), AUC for LR2 was 0.90 compared to 0.92 for RMI (LR2-RMI difference of −0.02 (P = 0.5).

Figure 1. ROCs for LR2 and RMI in the whole sample of the study (n = 301).
**Conclusion** Overall LR2 test performance was maintained in examiners with varying levels of training and experience. LR2 performed markedly better than RMI with a clear diagnostic advantage in premenopausal women.

**EP7.28**

**Diagnostic performance of IOTA simple descriptors and rules to characterise adnexal masses: a multicentre prospective external validation**

Sayasneh, A1; Kaijser, J2; Preisler, J1; Stalder, C1; Johnson, S3; Smith, A1; Drought, A4; Husicka, R1; Guha, S1; Raslan, F3; Naji, O1; Abdallah, Y1; Ghaem-Maghami, S1; Van Calster, B2; Timmerman, D2; Bourne, T1,2

1Imperial College London, London, United Kingdom; 2KU Leuven, Leuven, Belgium; 3Princess Anne University Hospital, Southampton, United Kingdom; 4West Middlesex University Hospital, London, United Kingdom

**Objectives** To evaluate the diagnostic performance of the IOTA Simple Descriptors and Simple Rules for preoperative characterisation of ovarian masses when ultrasonography is performed by examiners with different background training and experience.

**Methods** A 27 month prospective multicenter cross-sectional study. Thirty-six (level II) ultrasound examiners contributed in three UK hospitals. Transvaginal ultrasonography was performed using a standardised approach. Six ultrasonic IOTA Simple Descriptors (SD) were used to characterize adnexal masses (Table 1). Ten Simple Rules were used (5 B Rules and 5 M rules) as a second stage test if SD were not conclusive. For RMI (Table 1). Ten Simple Rules were used (5 B Rules and 5 M rules) as a second stage test if SD were not conclusive. For RMI.

**Results** Ten Simple Rules were used (5 B Rules and 5 M rules) as a second stage test if SD were not conclusive. For RMI. When the two-step (SD + SR) test was applied, sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and Diagnostic Odds Ratio DOR were 95%, 95%, 17.5, 0.05 and 348 compared to 73%, 95%, 14.9, 0.29 and 51.6 for RMI, respectively. When SR were conclusive, sensitivity and specificity were 92% and 96% compared to 70% and 95% for RMI, respectively. When the two-step (SD + SR) test was applied, sensitivity, specificity, positive likelihood ratio, negative likelihood ratio and Diagnostic Odds Ratio DOR were 95%, 95%, 17.5, 0.05 and 348 compared to 73%, 95%, 14.9, 0.29 and 51.6 for RMI, respectively.

**Conclusion** The IOTA Simple Descriptors and Rules shows very good test performance on external validation in the hands of examiners with different background training or relatively little experience using ultrasonography.

**Table 1** Simple descriptors

<table>
<thead>
<tr>
<th>Simple descriptor</th>
<th>Correct outcome (benign or malignant)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign</td>
<td>Unilocular ground glass cyst in a premenopausal woman</td>
</tr>
<tr>
<td></td>
<td>Unilocular cyst with acoustic shadows in a premenopausal woman</td>
</tr>
<tr>
<td></td>
<td>Unilocular anechoic regular wall cyst, maximum diameter &lt;10 cm</td>
</tr>
<tr>
<td></td>
<td>Remaining unilocular regular wall cysts</td>
</tr>
<tr>
<td>Malignant</td>
<td>Tumor with ascites and at least</td>
</tr>
<tr>
<td></td>
<td>moderate color</td>
</tr>
<tr>
<td></td>
<td>Doppler, postmenopausal woman*</td>
</tr>
<tr>
<td></td>
<td>Age &gt;50 years and CA 125 &gt;100 U/mL*</td>
</tr>
<tr>
<td></td>
<td>24/25 (95.8)</td>
</tr>
<tr>
<td></td>
<td>6/6 (100)</td>
</tr>
<tr>
<td></td>
<td>16/16 (100)</td>
</tr>
<tr>
<td></td>
<td>30/31 (96.8)</td>
</tr>
<tr>
<td></td>
<td>19/20 (95)</td>
</tr>
<tr>
<td></td>
<td>41/44 (93.2)</td>
</tr>
</tbody>
</table>

*Five cases overlapped.

**EP7.29**

**Do women attending an abortion clinic wish to see the ultrasound scan image of their fetus?**

Prabakar, I1; Mullin, NH2

1Liverpool Community Health, Liverpool, United Kingdom; 2Countess of Chester Hospital NHS Foundation Trust, Chester, United Kingdom

**Background** The recent RCOG Green Top Guideline, The care of women undergoing induced abortion, states that ultrasound (USS) should be available, it should be provided in a setting and manner that is sensitive to the woman’s situation and before it is performed, women should be asked whether or not they wish to see the image. In our NHS termination of pregnancy service we have noticed an increasing number of women and their partners asking to look at the USS monitor screen during their dating scan, and some women have also asked for a photograph. We decided to investigate the wishes of our patients and their experience of USS during the pre-termination of pregnancy consultation.

**Method** A prospective quantitative and qualitative study using an anonymously completed questionnaire in the outpatient clinic. Women who were diagnosed with a miscarriage were excluded. At the time of this study, women were not routinely shown the image. In our NHS termination of pregnancy service we have noticed an increasing number of women and their partners asking to look at the USS monitor screen during their dating scan, and some women have also asked for a photograph. We decided to investigate the wishes of our patients and their experience of USS during the pre-termination of pregnancy consultation.

**Results** Over 3 months, 53 questionnaires were returned, response rate 57% (53/97). All the women who participated in the study proceeded to have a first trimester termination of pregnancy, mean age 25 (range 15–44), mean parity was 1 (range 0–3). The majority of respondents, 94% (50/53), were expecting a ultrasound scan; 32 women (60%) did not want to view the image or have a photograph. The remaining 20 women (one did not complete this question) said they wished to view the image but only seven women actually did look at the screen, and nine women wanted a photograph (median age 19 years, range 16–23).
All participants were satisfied with the way the scan was carried out and with their care.

**Conclusions** Generally women do not want to see an image of their fetus when they attend a termination of pregnancy service. However, a minority of younger women, requesting termination of their first pregnancy, would like the opportunity to look at the image and this should be allowed as it may be helpful to some women. We now inform women that they may look at the screen if they wish; a partner may only view the screen with the woman’s permission. We do not provide photographs due to cost and medico-legal reasons.

**EP7.30**
**A rare complication of uterine fibroid embolisation**

Pingili, R; Mohamed, R; Meskhi, A

Wigan, Wightington and Leigh NHS Trust, Wigan, United Kingdom

**Introduction** Uterine artery embolisation (UAE) is a relative newcomer to the mainstream treatment modalities available for fibroid-related problems. The efficacy of UAE is indisputable and has been shown to be comparable to hysterectomy in the short term in large scale trials. Moreover, compared with hysterectomy, UAE is less invasive, carries a superior risk profile, and, importantly, preserves the uterus. UAE therefore offers patients symptom relief whilst at the same time retaining reproductive potential. Among the complications that have been reported in the literature are; pelvic pain, post embolisation syndrome, thromboembolism, expulsion of fibroid tissue and rarely cases of ovarian and sexual dysfunction.

**Case** A 34-year-old female presented with history of lower abdominal pain and vomiting of 2 weeks duration. Three months prior she underwent a UAE for a sub-serous posterior uterine wall fibroid of 9.3 x 9.2 cm with no immediate complications. On examination, her abdomen was tender with generalised guarding and rigidity. Blood results showed markedly raised inflammatory markers. A computed tomography scan of her abdomen and pelvis showed a necrosing fibroid and appearances that were in keeping with GI tract perforation. She subsequently underwent an urgent laparotomy, which showed partial expulsion of the necrosed fibroid through the posterior uterine wall and significant pus in the abdominal cavity, but no bowel perforation was noted. Therefore, peritoneal lavage and myomectomy were performed. The patient had an uneventful recovery.

**Discussion** Uterine fibroid embolisation (UAE) is becoming an increasingly popular alternative to surgical intervention, mainly due to its efficacy, minimally invasive approach and the preservation of reproductive potential. UAE has been established as a treatment option for women with symptomatic fibroid disease. Expulsion of a necrosed fibroid is a well-known complication of sub-mucous fibroids, but it can rarely happen with sub-serous fibroid. However, when it occurs can give a clinical and radiological picture of bowel perforation, through the presence of free air in the abdomen. Hence clinicians should be aware of these potential findings secondary to the stated complication. Further research into uterine artery embolisation of fibroids is needed to establish evidence on its outcome and more importantly, its complications and risks of re-intervention.

**EP7.31**
**Ovarian cysts in premenopausal women as emergency gynaecology admission: an audit**

Minns, J; Haque, L; Ashok, P

Aberdeen Royal Infirmary, Aberdeen, United Kingdom

**Objective** Ovarian cysts are common and up to 10% of women will undergo some form of surgery during their lifetime for the presence of an ovarian mass. These are usually benign in almost all premenopausal women. The aim of clinical management is to identify those women who will require more than only conservative management, given that most ovarian cysts in this population will resolve spontaneously.

**Method** Retrospective case note analysis. Total 36 patients identified as acute admissions between May and August 2012

**Results** Twenty-four women were managed conservatively and 11 underwent laparoscopy (Diagnostic ± proceed), due to symptoms or the size of cysts on ultrasound. Among these, two patients had negative findings in theatre. One patient required referral to oncology services and had a laparotomy. One patient underwent aspiration under ultrasound guidance, due to very high BMI being a contra-indication to definitive surgical management. Imaging heavily influenced management in all cases. Transvaginal ultrasound (TVUSS) is favoured over transabdominal (TAUSS) and is also recommended. In this population 31 underwent TVUSS. Two had only TAUSS. Three patients underwent Computed Tomography (CT) without any other imaging and they were initially under the care of the general surgeons, referred to gynaecology after CT. Four cases were identified in which complex cysts may have necessitated further imaging by either CT or MRI. CA125 is a useful tumour marker in those with non-simple cysts. Seventeen women had this measured. However seven of these women had only simple cysts. There were eleven cases identified whose imaging should have prompted measurement of CA125, but did not, three of these were initially under the care of the general surgeons. Other tumour markers, such as LDH and AFP were ordered inappropriately in three cases, CEA, hCG inappropriately in seven cases and should have been requested in one other case. None of the 36 patients identified had had a Risk of Malignancy Index (RMI) documented. Twenty seven patients were appropriately followed-up. The remaining patients were seen in clinic or re-scanned in spite of no indications.

**Conclusion** Clinical judgement clearly plays a key role in the management of premenopausal women with ovarian cysts. There may be a greater role for the use of definitive guidelines. A better working knowledge of these as well as expert consensus on management may improve patient outcomes and reduce costs.
A case report of Mayer–Rokitansky–Kuster–Hauser syndrome
Srinivasan, J; Hatti, A; Yu, MC
Queen’s Hospital Burton, Burton-on-Trent, United Kingdom

Background Mayer–Rokitansky–Kuster–Hauser syndrome (MRKH) is a congenital aplasia of the uterus and the upper two-thirds of the vagina in women with normal secondary sexual characteristics and karyotype. It affects about 1 in 4500 women.

Case We present a case of MRKH syndrome in a 36-year-old woman who presented with infertility was referred from the fertility centre for imperforated hymen. During her clinic appointment with her sister-in-law as an Urdu interpreter, detailed history review she had attained menstruation at age of 16 with irregular period since then. She had been married for 8 years and was not able to have penetrative sexual intercourse. She was amenorrhoeic for 6 months before attending the clinic with a negative pregnancy test and normal hormone profile. On vaginal examination, two fingers could be admitted and it was 3 cm long, blind ended, cervix was not felt. She has undergone investigations including transvaginal ultrasound, karyotyping, MRI and laparoscopy. Transvaginal ultrasound scan was difficult to perform as the probe could not be fully inserted.

An MRI showed a haematometra and cystic dilatation of lower body of uterus and a slightly narrow vagina. She was subsequently listed for a diagnostic laparoscopy, which revealed the vagina was separated from the peritoneal cavity by thick membranous tissue and a left ovarian mass. Before the procedure, she recalled she never attained menstruation, which changed the presenting complaint to primary amenorrhoea.

The case was discussed in the gynaecology multi-disciplinary meeting and a consensus opinion to repeat MRI scan. The scan showed a mass which was highly suspicious for an ovarian fibroma from the left ovary, with no evidence of a normal uterus or cervix and the appearances were suggestive of Mayer–Rokitansky–Kuster–Hauser syndrome.

The findings were explained to her from an Urdu speaking doctor and she did not want to reveal the results to her family. She requested elongation and dilatation of the vagina and she was referred to a specialist gynaecologist for the procedure.

Conclusion This case highlights the importance of clinician–patient communication, which impact on initial diagnosis; and the use of MRI imaging in gynaecology to confirm the diagnosis.

Accuracy of imaging in adnexal masses: an audit
Rana, R; Padwick, M
Watford General Hospital, Watford, United Kingdom

Objective To assess the accuracy in reporting of imaging – TVUS, CT scan/MRI in women diagnosed with adnexal mass and who subsequently had surgery for the same.

Methods It was a partly prospective and partly retrospective audit from 1 October 2011 to 30 March 2012. Data were collected from the hospital notes and icris database after shortlisting the cases from theatre register. Total of 120 women were identified however complete details were available only for 70 cases. The imaging was compared with the operative findings and histology results. Standards were derived from RCOG guidelines for management of ovarian cyst in pre and postmenopausal women and from the IOTA trial study results.

Results TVUS reported adnexal masses being 7% malignant, 36% benign and 57% inconclusive. Suboptimal reporting in 43% cases. The sensitivity of TVUS in diagnosing malignancy is 93–7% and specificity is 44–93% depending on considering inconclusive cases as malignant or benign respectively. For malignancy the NPV of CT/MR imaging was 88% and 91%; PPV was 50% and 100% – respectively in cases where suspicious lesions were included and excluded as being malignant.

Conclusion At the moment good reporting for endometriomas and dermoids. There was no standard report format and no uniformity in the features commented. There should be a standard format in reporting of these adnexal masses to be able to implement RMI rule and to rule out the possibility of malignancy with confidence and also to minimise further advanced scanning like MRI and CT in benign lesions.
EP7.35
Reliability of ultrasonography and hysteroscopy in the study of the uterine cavity
Chaouki, M; Fatma, Z; Najeh, H; Fatma, K; Hedhili, O
Medecine University, Tunis, Tunisia

Objective Pelvic ultrasonography and hysteroscopy are currently two exams exploration of the uterine cavity. Despite their daily assessment of their performance is rarely achieved. Through a study of 346 patients having benefited ultrasound and hysteroscopy, we compare these two examinations view diagnostic reliability.

Methods This is a retrospective study about 346 patients having benefited from a pelvic ultrasound and hysteroscopy over a period of 3 years between 2007 and the beginning of the fi 2010, gynecology obstetrics of Regional Hospital Ben Arous.

Results The average age of patients was 45.11 years. The indications for exploration are dominated by bleeding (62.1%), infertility (17.3%) and polyps (16.6%). The concordance between the two tests was found only in 72%. It is better when it comes to cancer (99.5%) or atrophic endometrium (85%). Hysteroscopy is more effective in the diagnosis of intracavitary fibroids (90% concordance) and intracavitary polyp (concordance 85%). However, ultrasound is more effective for the diagnosis of functional disorders of the endometrium (Se: 73% against 40%), especially for the diagnosis of atrophy. It is also more efficient than hysteroscopy for the detection of cancerous lesions of the endometrium. They just both a sensitivity of 100% and an excellent fit with the histological diagnosis.

Conclusion Despite this relatively low concordance for certain pathologies, the couple hysteroscopy ultrasound provides more diagnostic accuracy. Hysteroscopy is the examination of choice, transvaginal ultrasound is suggested as first-line and a better approach to diagnosis and treatment of endometrial lesions and intracavitary.

EP7.36
Placenta accreta: ultra sonographic diagnosis and MRI rules. Tunisian experience
Chaouki, M; Fatma, Z; Najeh, H; Fatma, K; Hedhili, O
Medecine University, Tunis, Tunisia

Objective Placenta accreta is a condition of abnormal placental implantation in which the placental tissue invades beyond the decidua basalis. It is associated in 60% of cases with placenta praevia. The aim of our study is to evoke an anomaly placental insertion, illustrate the characteristics of semiological placenta accreta in ultrasound and MRI and know the contributions and limits of both imaging techniques.

Methods This is a retrospective study of five cases of placenta accreta confirmed by pathological analysis in our maternity occurred between January 2010 and March 2012. The diagnosis of placenta accreta was suspected on 2D ultrasounds in the third trimester, showing placental gaps on low – inserted placenta, implanted on caesarean scar (five cases). The use of color Doppler, power Doppler and pelvic MRI contributed to the positive diagnosis of placenta accreta.

Results The average age was 32 years. The mean gravidity was 2.7 and the average parity of 2.2. Four parturient had a caesarean-scar and a 38-year-old primipara had no scar or history of uterine maneuver. Only one was misdiagnosed and diagnosis occurred intraoperatively.

Conclusion Imaging plays a central role in organizing suitable care for patients with abnormal placental implantation. If ultrasound detects anomalies of insertion, color Doppler analysis is essential for placental vascularisation visualisation. MRI is complementary to sonography, it specifies the degree of placental invasion and appears as a technique of choice in cases of posterior placenta.

EP7.37
Name that mass! A rare case of a cystic fibroid
Asif, S; Smith, S
Chesterfield Royal Hospital NHS Foundation Trust, Chesterfield, United Kingdom

Case A 36-year-old para 4 lady was referred to the gynaecology outpatient clinic with a 6 months history of constant painless vaginal bleeding. Prior to this her cycles had been regular. She attended her GP surgery for a Mirena coil fitting and was found to have a pelvic mass consistent with 18 weeks of pregnancy. Her urinary pregnancy test was negative.

On examination her abdomen was soft and non tender. Speculum examination was unremarkable but there was a 18 week size uterus palpable on pelvic examination.

A transvaginal ultrasound scan revealed a markedly enlarged uterus, with a large sac like structure measuring 12 × 8 × 13 distending the endometrial cavity. Haematocolpos? Longstanding retained products of conception? The ovaries and adnexal regions appeared normal.
She underwent an evacuation of retained products (ERPOC) which yielded minimal tissue and an uterine cavity length of 15 cm. Another urgent ultrasound scan was performed after the procedure and showed a 8 cm cystic area present on the posterior wall of the uterine cavity. She was discharged home with a view to having an MRI as an outpatient.

She was admitted with acute lower abdominal pain and bleeding 3 day post ERPOC and an urgent MRI scan was organised. This revealed a large 12 cm unilocular cyst arising from the posterior wall of the uterus with displacement and compression of the cavity anteriorly. The ovaries appeared normal. The radiologist surmised whether this could be due a congenital anomaly that is a septate uterine cavity with a blind ending vestigial or second uterine cavity which since menarche has been accumulating the products of haemorrhage or secretions. These findings were discussed with the patient and a hysterectomy with conservation of ovaries was offered, which she accepted.

At operation an 18 week sized fibroid uterus was found. The ovaries were normal and there was no evidence of disseminated disease. The hysterectomy was uneventful and she made a good recovery.

The histology of the uterus showed a normal uterus with no congenital anomalies. There was however a 17 × 7 × 6 cm cyst within a large fibroid arising from the posterior wall of the uterus. The cyst was likely to represent a degenerative process within the fibroid.

Conclusion This case illustrates the complex nature of diagnosing the exact nature of a pelvic mass on imaging and how fibroids can undergo cystic and degenerative changes in non pregnant parous women.

EP7.38
The value of ultrasonography in the diagnosis of ovarian vein thrombosis postpartum
Chaouki, M; Fatma, K; Najeh, H; Fatma, Z; Hedhili, O
Medecine University, Tunis, Tunisia

Objective The ovarian vein thrombosis is a rare complication of postpartum. The diagnosis is often difficult because of the non specific and misleading symptoms. The ultrasound is a major diagnostic contribution. In this study we show that ultrasound is a major diagnostic contribution in this disease.

Methods We report five cases of ovarian vein thrombosis collected at the department of obstetrics and gynecology at Ben Arous Hospital

Results The clinical presentation was nonspecific, dominated by fever, pelvic or lower back pain. A biology leukocytosis and increased CRP were present in all cases. The diagnosis was suspected clinically in three patients and ultrasound with Doppler study confirmed the diagnosis of ovarian vein thrombosis. The average age of patients was 23.8 years. The average parity was 1.8 and delivery was vaginal in all patients.

All patients had parenteral antibiotics and heparin with AVK relay for 6 months. One patient had a pulmonary embolism. The evolution after treatment was favorable in all cases.

Conclusion Ovarian vein thrombosis is a rare but serious complication of postpartum and has non-specific symptoms. It is a diagnosis to be mentioned in front of any febrile abdominal pain syndrome in postpartum. Ultrasonography with Doppler study remains the first-line examination for both positive diagnosis and for monitoring evolving under appropriate treatment, despite the greater sensitivity of CT and MRI.