OC16.03

Fertility-sparing surgery and borderline ovarian tumours: oncological and fertility outcomes from a UK London gynecological oncology centre

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Objectives: To determine the oncological and fertility outcomes following Fertility Sparing Surgery (FSS) for the management of Borderline Ovarian Tumours (BOTs).

Methods: A retrospective cohort of 172 women who underwent surgical management of BOTs between January 2004 and December 2020.

Results: Three histopathological subtypes of BOT were diagnosed: 120 (69.8%) serous, 43 (25%) mucinous and 9 (5.2%) seromucinous. The mean age of presentation was 44.8, 38.9 and 38.8 years respectively. 52.3% (90/172) underwent FSS, 45.3% (78/172) non-FSS and 2.3% (4/172) unknown. Within the serous group the recurrence rate amongst women who underwent FSS was 36.8% (21/57), on average 51.1 months post- operatively (SD ± 35.0); compared to 9.5% (6/63) amongst women who underwent non-FSS. All recurrences in the latter group presented as progression to low grade serous ovarian cancer, on average 62.2 months (SD ± 48.9) post-operatively. Two recurrences of BOTs occurred in the seromucinous group following FSS. Within the serous group, a significant difference between type of surgery performed (FSS v Non-FSS) and association with recurrence of BOT was observed (Pearson Chi-Square: $p = 0.000$; x^2=20.613, 95% CI (0.126-0.427). The survival rate was 100%. US guided laparoscopic ovarian wedge resection was introduced as a novel method of FSS in 12 women, of which there were no surgical complications. Type of FSS was not significantly associated with recurrence of BOT. (Pearson Chi- Square x^2=3.166, $p = 0.379$). Pregnancy rate per woman of reproductive age was 32.4% (22/68), 25.8% (8/31) and 42.9% (3/7) and successful livebirth rate per pregnancy was 75.7% (28/37), 46.7% (7/15) and 66.7% (2/3) in the three groups respectively.

Conclusions: Type of FSS is not associated with recurrence of BOT. Successful oncological outcomes are observed from ultrasound guided laparoscopic ovarian wedge resection. Spontaneous pregnancies can be achieved during interval monitoring of disease following FSS.

OC16.04

Estradiol and progesterone influence maternal cardiovascular parameters during fresh and frozen *in vitro* fertilisation

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Objectives: To explore the longitudinal changes in maternal hemodynamics during *in vitro* fertilisation (IVF), fresh and frozen cycles, and to evaluate the impact of ovarian stimulation and estradiol/progesterone concentrations on cardiovascular parameters.

Methods: This was an observational longitudinal cohort study. 71 healthy women aged 18-41 years, were recruited from a single inner city assisted conception unit. Women underwent either ovarian stimulation and embryo transfer (fresh group) or hormone replacement cycles and transfer of thawed embryos (frozen group). Non-invasive cardiovascular measurements were taken over 4 visits, pre and post embryo transfer: Cardiac Output (CO), Mean Arterial Pressure (MAP), Heart Rate (HR), Peripheral Vascular Resistance (PVR) and Augmentation Index (Aix). Serum Oestradiol and Progesterone were collected at each visit. Correlation was calculated using Spearman testing.

Results: There were no significant changes in CO, MAP or PVR during fresh or frozen IVF cycles. There was a significant increase in HR ($p = 0.0001$) peri-implantation in those who conceived, which was greater with fresh cycles ($p = 0.006$). Aix was significantly higher at all time points in the Frozen group compared to the Fresh, regardless of conception ($p = 0.02$). There was a positive correlation between serum Progesterone and HR ($r_{s=}0.232$; $p = 0.001$) and a negative correlation between serum Oestrogen and PVR ($r_{s=}$-0.213; $p = 0.003$).

Conclusions: The novel findings are that (a) women who conceived, regardless of cycle type, had a significant increase in HR around implantation, as evidenced by a positive pregnancy test, and (b) Oestradiol and Progesterone concentrations were associated with PVR and HR during the IVF cycles. The higher Aix, a marker of vascular stiffness, in frozen cycles may explain the observation that they are associated with a higher risk of gestational hypertensive disorders.

OC16.05

Severe pain during hysterosalpingo-contrast-sonography: a systematic review and meta-analysis

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Objectives: To assess the frequency of severe pain perception during hysterosalpingo-contrast sonography (HyCoSy) in infertile patients and to assess whether there are differences in the frequency of associated pain according to the contrast used.

Methods: Systematic review and meta-analysis of studies addressing the use of HyCoSy in infertile women. Searches were carried out in two databases (Pubmed and Web of Science). We included prospective or retrospective cohort observational studies that specified the type of contrast used during HyCoSy and reported data regarding the number of patients who perceived severe pain during the procedure and the scale used for pain perception score. Pooled frequency of severe pain perception during HyCoSy and the pooled frequency of severe pain perception based on the contrast used.

Results: 29 studies were included in this meta-analysis including a total of 7139 patients. In 10 studies, Saline solution with air was used as contrast *EchoVist*^{TM} was used in ten studies, in five studies, *SonoVue*^{TM} was used and in four studies, *ExEm-Foam*^{TM} was used as contrast. Pooled estimated frequency of severe pain perception during HyCoSy was 6% (95% CI: 4% – 9%). No statistically

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significant differences have been described regarding frequency of severe pain perception in relation to the different contrasts used.

Conclusions: HyCoSy is a tolerable outpatient procedure. We did not find any evidence that one specific contrast was better tolerated than any other was.

OC16.06
A 10-year review of the magnetic resonance imaging and clinical features of Mayer-Rokitansky-Küster-Hauser syndrome

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Objectives: Mayer-Rokitansky-Küster–Hauser (MRKH) syndrome is a congenital disorder characterised by uterine and vaginal hypoplasia. Magnetic resonance imaging (MRI) is the gold standard for diagnosis. Imaging features of MRKH have been correlated with surgical findings, but clinical implications are less understood. We aim to correlate the imaging findings with clinical history to understand the association between morphology and functionality of uterine anlage.

Methods: Women referred to a specialist service with a diagnosis of MRKH who had an MRI pelvis between 1st January 2011 – 31st April 2021 were included. Outcomes were predefined. Images were analysed by specialist gynecological radiologists. Clinical data was extracted from an electronic patient record system.

Results: 136 patients were included. Half (49.6%) of women presenting had a history of pain, most often abdominal (86.4%) or vaginal (10.6%). 47.7% reported cyclical pain, 40% variable and 10% dyspareunia. Anlage were identified in 93.3% of women (n = 126). There was visible endometrium in 12.6% and a fibrous band in 94.1%. Ovaries were present in 97.1%. The mean anlage volume was 4.45cm^3 on the right and 4.78 cm^3 on the left. Ovaries were ectopically positioned in 38.5%. Renal and vertebral anomalies were present in 33.1% and 16.2% respectively. 4.6% of women had imaging features of endometriosis. Women with pain were significantly more likely to have a functional anlage compared to those without (34.9% vs 10.8%, $p = 0.001$). Pain was not strongly associated with ectopic ovary position on MRI. Common gynecological pathology such as ovarian cysts and fibroids were also seen.

Conclusions: This is the largest retrospective review of MRI features of MRKH to date. We identify that majority of women with MRKH will have uterine anlage with a connecting fibrous band, with an ectopic ovarian position in many cases. Pain is a common issue and is significantly associated with a functional anlage on MRI. Further work is required to identify how other gynecological pathology impacts these women.

OC16.07
Comparing ultraviolet vaginal ultrasound probe cleaning with a chlorine dioxide wipe system

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Objectives: To compare efficiency, ease of use, and user satisfaction of two methods of transvaginal ultrasound (TVUS) probe cleaning: ultraviolet (UV-C) (germitec chronos) and a chlorine dioxide wipe system (tristel trio).

Methods: In this prospective survey study, UV-C units were introduced into a busy Early Pregnancy Assessment Unit and compared with a chlorine dioxide wipe system. Practitioners were trained in the use of both systems. Time taken to complete a cycle of cleaning before each patient with the system allocated to that room was measured with a stopwatch and recorded using a quick response (QR) code-linked survey. Practitioners also documented what additional necessary tasks they could complete before seeing their next patient, as probe cleaning was ongoing. Using another QR code-linked survey, practitioners scored ease of use, satisfaction of the system used and their preference. A section for free-text comments was then completed. Statistical analysis was performed using GraphPad Prism v8.2.1.

Results: Cleaning using UV-C (n=331) was 60% faster than the chlorine dioxide system (n=332) (101 vs 250 seconds, $p<0.0001$). A greater number of tasks during probe cleaning were completed when using UV-C, saving a further 74 seconds per patient ($p<0.0001$). Practitioners using UV-C (n=71) reported greater ease of use (10 vs 3/10, $p<0.0001$) and satisfaction (10 vs 2/10, $p<0.0001$) than those using the chlorine dioxide system (n=43). 98% preferred UV-C. Practitioners reported how time-consuming and environmentally unfriendly the chorine dioxide system was, whilst complimenting the efficiency and ease of use of UV-C.

Conclusions: UV-C technology was more efficient, saving 2 minutes 29 seconds cleaning time per patient. It also allowed more tasks to be completed between patients, saving a further 1 minute 14 seconds. For an ultrasound list of 15 patients, this amounts to 55 minutes 45 seconds extra time available. Practitioners found UV-C preferable, more satisfactory and easier to use. UV-C should be the cleaning approach of choice for TVUS.

OC16.08
Characteristics of a large cohort of 303 women with unicornuate uterus: subtypes and coexisting gynecological abnormalities

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Objectives: To characterise sub-types of unicornuate uterus and prevalence of benign comorbidities in a large cohort of women with unicornuate uterus.

Methods: A retrospective case-control study carried out in a tertiary hospital between Jan 2008 and Sept 2020, including all women diagnosed with a unicornuate uterus on transvaginal or rectal ultrasound. A control group of women with normally formed uteri were matched for age, body mass index and ethnicity. The primary objective was to describe the frequency of sub-types of unicornuate uterus and coexisting urogenital anomalies and benign gynecological conditions.

Results: 303 unicornuate case were compared to 303 matched controls. 206/303 (68%) of women in the study group had a rudimentary horn, of which 5/206 (3%) were communicating and functional, 85/206 (41%) non-communicating and functional, and 116/206 (56%) non-functional non-communicating. 55% of women with a functional horn had it excised, the majority (78%) before the first pregnancy. Only 2% of non-functional horns were excised. Women with a functional horn were less likely to experience infertility than those with a non-functional horn (8% vs 17%, $p = 0.03$), but more likely to have endometriosis (24% vs 13%, $p = 0.023$), while a similar rate of adenomyosis occurred

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