

management of endometriosis using GnRH analogues (stages I–III) has become widely practised. The objective of this study was to compare the effectiveness of medical treatment of endometriosis with that of conservative surgical treatment either alone or in combination with medical treatment.

**Materials and methods:** A prospective clinical study of 71 patients, proved laparoscopically to have endometriosis, excluding severe endometriosis (stage IV), was performed. The main outcome measures were symptoms reported by the patients, results of a clinical examination by the physician and findings of a second-look laparoscopy in each group, with a minimum of 6 months follow-up. Group I included 40 patients (56.3%) who received medical treatment in the form of a goserelin (Zoladex; Zeneca UK) s.c. injection of 3.6 mg every 4 weeks for 6 months. A total of 31 (43.7%) patients received laparoscopic diathermy of endometriosis. Group II included 15 patients (21.1%) who were managed solely by laparoscopic diathermy of endometriosis. Group III included 16 patients (22.5%) who were managed as in group II but they were also given Zoladex for 6 months.

**Results:** Treatment with laparoscopic diathermy of endometriosis combined with GnRH analogue was associated with marked improvements or a cure, as assessed by symptoms reported by the patient ( $P < 0.05$ ) and clinical findings ( $P < 0.01$ ). Of the women who received GnRH analogue alone, 65% needed further treatment with laparoscopic diathermy of endometriosis or hysterectomy.

**Conclusion:** Patients who received either conservative surgery alone or with Zoladex were 2.06 times more likely to have either a marked improvement or a cure at 6 months follow-up, as assessed by reported symptoms of the patients and clinical findings, than those who received Zoladex alone. Laparoscopic diathermy of endometriosis should be considered as the first line of treatment.

#### 11.00–11.15

##### O-021. Laser-assisted opening of the zona pellucida facilitates polar body biopsy

Montag M., van der Ven K., van der Ven H., Delacrétaz G.<sup>1</sup> and Rink K.<sup>2</sup>

*Department of Endocrinology and Reproductive Medicine, University of Bonn, 53105 Bonn, Germany, <sup>1</sup>Institut d'Optique, Ecole Polytechnique Fédérale de Lausanne and <sup>2</sup>MTM Medical Technologies Montreux, PSE, 1015 Lausanne, Switzerland*

**Introduction:** Biopsy of the first and/or second polar body is a new tool in the range of micromanipulative assisted reproductive techniques. It is used for preconception diagnosis of genetic disorders such as aneuploidies. Here we report on the use of a laser system (Fertilase™) to create a hole in the zona pellucida prior to aspiration of the polar body. This allows the use of flame-polished, blunt-ended sucking pipettes for polar body aspiration.

**Materials and methods:** The safety of the laser application and its possible impact on embryo development were tested

on fertilized mouse eggs at the pronuclear stage. A 12–15 µm diameter hole was created in the zona pellucida by a 1.48 µm diode laser working in a tangential, non-contact operation mode. A flame-polished, blunt-ended glass needle with an inner diameter of 10–12 µm was introduced through that opening into the perivitelline space and positioned next to the polar body, which was then removed by gentle aspiration into the needle. Eggs were cultured for a further 5 days to assess embryo development and hatching characteristics.

**Results:** We succeeded in removing polar bodies without damaging an egg. Polar bodies were retrieved intact and further handling was easy and reliable. All eggs subjected to laser-assisted opening developed to 2-cell embryos. Subsequent development was not impaired, leading to >90% hatched blastocysts. Similar results were recorded for control eggs, which received laser treatment without polar body aspiration. Lower hatching rates were observed in eggs which were not treated at all.

**Conclusion:** Laser-assisted opening of the zona pellucida by a non-contact 1.48 µm diode laser system facilitates subsequent biopsy of the polar body through the hole created. The possibility of using blunt-ended, flame-polished micropipettes greatly reduces the risk of damage to the egg or the polar body. Thus by using the proposed method, polar body biopsy becomes more accurate and effective for preconception diagnosis.

#### 11.15–11.30

##### O-022. Uterine junctional zone contractions during an IVF and embryo transfer cycle

Lesny P., Tetlow R., Robinson J., Maguiness S. and Killick S.R.

*Academic Department of Obstetrics and Gynaecology, University of Hull, Cottingham Road, Hull, UK*

**Introduction:** Subendometrial myometrium or junctional zone (JZ) contractions have been shown to have different patterns depending on the phase of menstrual cycle. It is well recognized that drug protocols used for assisted conception treatment generate superphysiological concentrations of hormones which, together with other medication, may adversely affect that contractility. The aim of this study was to evaluate JZ activity throughout an IVF cycle, including easy and difficult embryo transfers.

**Materials and methods:** A total of 12 oocyte donors acted as model IVF and embryo transfer patients. Goserelin, urofollitrophin, HCG and micronized progesterone were used in a long protocol cycle. Ibuprofen, midazolam and alfentanil were provided for analgesia and sedation during oocyte retrieval. Nine donors agreed to participate in a mock embryo transfer with 30 µl Fehovist (Schering Health Care), and in five the embryo transfer was made deliberately more traumatic. Vaginal ultrasound was used to record JZ activity after down-regulation (day 0), at days 7 and 10, at HCG