Minimal Access Surgery in Gynaecology

Today, laparoscopy is an alternative technique for carrying out many operations that have traditionally required an open approach.

The benefits of minimal access surgery have been well recorded, including lower post-operative morbidity, shorter duration of hospital stay and a shorter return to work.

Advances in technology, specifically in fibre optics and video imaging, have made the relatively recent rapid progress in laparoscopic surgery possible. Operative laparoscopy, however, requires a high degree of technical skill and training.

The use of small instruments and imaging systems that provide magnification allow for the high degree of precision that can be achieved with laparoscopic surgery. This is often difficult to obtain by a conventional laparotomy, as magnification is not available and the surgeon's hands and large instruments often obscure the operative field.

It is this precision that has lead to advances in the treatment of conditions such as endometriosis, adhesions and in the field of reproductive surgery.

Hysterectomy

Hysterectomy remains one of the most common gynaecological inpatient procedures. Since most hysterectomies are performed for benign conditions, the choice of route almost entirely depends upon the surgeon's skill and experience. Avoiding a laparotomy in the appropriately chosen patient is without doubt beneficial. A recent Cochrane review has looked at the evidence for which route is best for performing hysterectomy. The conclusions were that the vaginal route is best. In patients whom the vaginal route is not possible, laparoscopic hysterectomy has benefits over the abdominal route. The benefits of laparoscopic hysterectomy versus abdominal hysterectomy were lower intra-operative blood (reduced drop in haemoglobin level), shorter duration of hospital stay, speedier return to normal activities, fewer wound or abdominal wall infections, fewer unspecified infections or febrile episodes, at the cost of longer operating time and more urinary tract (bladder or ureter) injuries.

Careful selection of pre-operative counseling of patients is therefore of paramount importance.
Myomectomy

Uterine fibroids are responsible for a wide variety of symptoms, including menorrhagia, pain/pressure symptoms, urinary tract symptoms and have been implicated in subfertility. The management of fibroids depends on the patient’s symptoms and the location of the fibroid in the uterus.

Asymptomatic patients can be managed conservatively and those in whom fertility is not an issue can be managed medically or by hysterectomy. Where fertility needs to be conserved, myomectomy is the treatment of choice.

Submucous fibroids can be normally be resected hysteroscopically but intramural and subserosal fibroids require an abdominal approach.

Laparoscopic myomectomy has been demonstrated as a feasible procedure in a number of observational studies. The large spectrum of fibroid size and location, difficulty with morcellation and removal, and the technical requirements of suturing make the procedure difficult to perform. These difficulties also complicate clinical outcome based evaluation and there is very little data evaluating relevant outcomes of this procedure.

The principle potential advantage of laparoscopic myomectomy over the open approach is a reduction in inpatient stay and an earlier return to normal activities. Theoretically, the reduction in tissue handling and manipulation and not using packs may reduce tissue trauma and adhesion formation.

The restrictions of laparoscopic surgery, however, include that it may not be possible to remove multiple fibroids through the same incision and the surgeon loses the ability to palpate the uterine tissue, detecting smaller fibroids. It may also be more difficult to approximate myometrial and serosal tissues, leading to poor healing of the uterine wall potentially leading to complications in future pregnancies. A recent survey of UK gynaecologists revealed that just over 10% performed laparoscopic myomectomies as part of their normal practice.

Laparoscopic surgery for endometriosis

The diagnosis of endometriosis is based on the presence of endometrial-like tissue outside the uterine cavity. Clinically, three entities can be distinguished: peritoneal implants, endometriotic cysts and deep nodular lesions. Laparoscopy and biopsy remain the gold standard for diagnosis; however, the skill of the surgeon is crucial to achieving an accurate diagnosis. The surgeon who does not perform laparoscopic surgery routinely will certainly diagnose typical endometriotic lesions, but risks missing a substantial amount of subtle disease. The laparoscopic surgeon should therefore adhere to a systematic approach and meticulous method of evaluating the pelvis to assure complete diagnosis of endometriosis. The laparoscope affords the surgeon the capability of altering the field of view, depending upon the proximity of the laparoscope to the tissue.

The definitive treatment of endometriosis for both pelvic pain and fertility is through laparoscopic excision or vaporization of the endometriotic tissue. For fertility, this was demonstrated through the Canadian Collaborative Group in Endometriosis who carried out a randomized controlled trial to determine whether laparoscopic surgery enhanced pregnancy rates in infertile women with minimal or mild endometriosis. They concluded that laparoscopic resection or ablation of minimal and mild endometriosis enhances pregnancy rates in infertile women (cumulative probabilities, 30.7% in the treated group and 17.7% in the untreated group).
Summary of Laparoscopic Surgery in Gynaecology

Benefits
* Less post-operative morbidity, shorter hospital stay and quicker return to work.
* Magnification allows for greater surgical precision.
* Most procedures that are carried out through a laparotomy can now be performed by laparoscopy.

Problems
* Operative laparoscopy, however, requires a higher degree of technical training and skill.
* Procedures may take longer operating time.
* A lack of skill or training can result in increasing medico legal claims.
Subfertility

Background: Subfertility is very common with 1 in 6 couples seeking specialist help. Approximately 84% couples will achieve a pregnancy in 1 year of regular unprotected intercourse which increases to 92% after 2 years. Referral for specialist advice should be considered after at least 1 year of trying, though under certain situations (female age > 35 years; known fertility problems; anovulatory cycles; severe endometriosis; previous pelvic inflammatory disease; malignancy) prompt investigations and referral may be recommended. Couples should be treated on an individual basis, as there is not necessarily a right answer as to when investigations and treatment should start. The management of subfertility aims to correct any specific problem which may or may not be diagnosed.

Causes of subfertility

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Ovulation disorder</td>
<td>21%</td>
</tr>
<tr>
<td>Tubal factor</td>
<td>15-20%</td>
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<tr>
<td>Male factor</td>
<td>25%</td>
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<tr>
<td>Unexplained</td>
<td>28%</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>6-8%</td>
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<tr>
<td>Sexual dysfunction</td>
<td>4-5%</td>
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</tbody>
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Treatment options at The Royal Berkshire Hospital

We see approximately 700 new patients a year through the fertility clinic at The Royal Berkshire Hospital. The number and range of patients referred vary quite dramatically from subfertility to complex cases involving reproductive genetics and assisted conception techniques. Over the past year approximately 60-65% patients attending the clinic achieved a pregnancy (excluding patients referred for assisted conception).

We have streamlined the clinic in order to reduce unnecessary appointments for patients and have set up community clinics at West Berks hospital, Bracknell and Townlands Henley order to bring specialist care closer to where patients live. We also offer supportive care for patients requiring additional care in early pregnancy and have a team of specialist doctors and nurses.

For further information please see:

- General fertility investigations: The assessment of couple with subfertility should ideally take place within a specialist clinic with appropriately trained staff that can readily access relevant investigations and instigate suitable management options. The history should be confirmed with the couple

- Reproductive surgery: Tubal patency; endometriosis surgery; fibroids; tubal surgery; ovarian cysts and uterine malformations.

- Management of polycystic ovarian syndrome: PCOS is the most common cause of secondary amenorrhoea and is responsible for 75-80% of anovulatory subfertility. Weight loss may be enough to improve symptoms and achieve spontaneous ovulation and should be tried first without resorting to ovulation induction. Other symptoms such
as acne, alopecia, hirsutism, oligomenorrhea, and weight gain may require other specialist treatments.

- **Ovulation induction therapy**: Metformin, clomifene and gonadotrophins; follicular tracking and support as recommended by NICE.

**Reading Satellite IVF Unit**

- In Reading there is a satellite IVF service (at CircleReading Hospital) with the Oxford Fertility Unit (www.oxfordfertilityunit.com), which enables the majority of appointments throughout IVF treatment to be done locally. We recognize that travelling to appointments may add to the stress of fertility investigations and treatment. We offer a satellite IVF service for initial consultation, investigation and monitoring of IVF and IUI treatment cycles. Patients will need to go to Oxford for the egg collection and embryo transfer.

The current NHS funding criteria for NHS South Central can be found at:


- **Management of recurrent miscarriage**: A full recurrent miscarriage screen can be performed along with subsequent supportive care during early pregnancy which has been shown to improve fertility outcomes.

**Further information**

www.rcog.org.uk

www.nice.org.uk