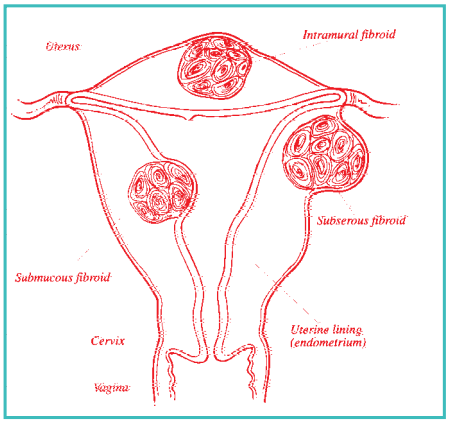
Laparoscopic Surgery and Perioperative Nursing

By Mr Adrian Lower FRCOG, Consultant Gynaecologist, Harley Street

Laparoscopic myomectomy as performed by the team at The London Clinic Minimally Invasive Therapy Unit under the direction of Mr Adrian Lower is offering more patients the choice of conservative surgery, for this most common gynaecological condition in what is almost a day case procedure.

Introduction

Uterine fibroids occur in up to 50% of women and although they only cause symptoms in around a quarter of cases they remain the most common cause of hysterectomy before the menopause. We know from recent research that fibroids substantially reduce the chance of conception, especially those which are submucous or intramural in site (Figure 1). Clearly hysterectomy is not acceptable to women who wish to conceive, and also has a fairly high complication rate, which many women whose family is already complete wish to avoid. Others wish to retain their uterus



Description to go here

for a variety of reasons including concerns regarding sexuality and the quality of their orgasm. A number of options have been developed by minimal access surgeons, which have a lower complication rate and may enhance fertility. Submucous fibroids are best dealt with by hysteroscopic resection using a diathermy armed resection loop. Alternatively a new bipolar diathermy instrument called Versapoint may be used to vaporise smaller fibroids.

Appropriate treatment

Intramural fibroids present something of a problem to most gynaecologists. Many are reluctant to perform a laparotomy for what may seem to be rather small fibroids of 3 or 4 cm in diameter because of the perceived risks and prolonged recovery time. Open myomectomy is a notoriously bloody procedure and is recognised to be one of the most adhesiogenic of gynaecological procedures and, where the goal is enhanced fertility, post-surgical peritubal adhesions may negate any benefit derived from myomectomy. Laparoscopic myomectomy is a potential solution, however, few gynaecologists have the necessary training to perform this procedure. Consequently many women may not be receiving appropriate treatment.

The Procedure

Laparoscopic myomectomy is performed under video-laparoscopic control using a small 10mm umbilical incision and two accessory ports of 5 mm and one of 10 mm. These small incisions have a much lower rate of wound infection, less postoperative pain and allow much earlier mobilisation and a faster return to work. Mr Lower's team have been using this technique for more than five years and have performed well over a hundred procedures without a single blood transfusion. The main obstacle to widespread uptake of the procedure is the need to suture the uterine defect after removal of the fibroid. Most surgeons do not achieve this level of hand-eye coordination until they have been performing laparoscopic surgery for many years. The difficulty lies in performing complex movements in a confined space using both the dominant and non-dominant hand on a two dimensional video monitor.

A well equipped theatre and highly professional support staff are essential to success. The advantage of laparoscopic surgery is that the whole theatre team can observe the procedure and anticipate equipment which may be required. In open surgery especially in the pelvis only the scrub nurse has any idea of what is going on. Some members of the nursing team have trained as first assistants. The first

Adrian involved in a laproscopic procedure

assistant plays a vital part in the procedure by holding the video camera, maintaining control of instruments which may be retracting bowel or the ovaries and Fallopian tubes, some develop a high level of hand-eye coordination and will assist in cutting of sutures and irrigation of the operative field.

Pedunculated fibroid

Intermural posterior wall fibroid before surgery

After laproscopic suturing of the myometril defect

Operative technique

The operation is performed using a 4 portal approach. One 10mm port at the umbilicus, one 5 mm port positioned in each iliac fossa and a 12mm port in the midline 5 to 10 cm above the symphysis pubis. Pitressin is injected to the uterine cornua to induce vasospasm and decrease bleeding. It also causes some peripheral vasoconstriction which can be alarming for the anaesthetist as the pulse oximeter often stops functioning. Using diathermy armed scissors the serosa is incised over the fibroid and the fibroid is stripped away from the myometrium in much the same way as it is at open surgery. The defect is then repaired in two layers using vicryl to obliterate the cavity left by the fibroid in a broad haemostatic suture followed by monocryl – a monofilament absorbable suture – to approximate the serosa.

The fibroid is removed from the peritoneal cavity using a morcellator introduced through the 12 mm suprapubic trocar site. The morcellator is a long tube of 12 mm in diameter with a rotating cylindrical knife blade inside which removes the fibroid tissue cutting it into long sausages of tissue – challenging for the histopathologist. The presence of a razor sharp rotating blade a few millimetres from the bowel also helps to focus the attention of the operating surgeon. It is essential that the blade is kept well in view throughout the procedure.

Some form of adhesion prophylaxis is required to prevent adhesions forming at the site of the suture line. Currently a solution of 4% Icodextrin is left in the peritoneal cavity as a hydroflotant to separate the tissues during the early phase of repair and adhesion formation. The efficacy of this product is currently under prospective evaluation in a pan-European study.
Post operative recovery is rapid. Most patients leaving hospital less than 24 hours after surgery. The majority will be back at work in two weeks, although it is important that patients realise that they have had major surgery and should allow adequate time for rest and recuperation.

Complications

The complication rate following laparoscopic myomectomy has been shown to be lower than open surgery in terms of the need for blood transfusion, infection and wound infection according to a recent Italian study. Some authorities have expressed concern that the repair of the myometrium may be less strong than after open surgery and so there may be a higher rate of uterine rupture in subsequent pregnancies. The limited evidence available on this aspect is conflicting. Further studies are required. For the time-being we recommend a formal trial of scar, as we would following an open myomectomy, with intrauterine pressure monitoring in a specialist obstetric unit or an elective Caesarean section.

Laparoscopic Surgery and Perioperative Nursing

By Stuart Pestana Perioperative Registered Nurse

The role of the Perioperative Nurse within the theatre environment has been constantly evolving and expanding, with forever increasing demands to gain knowledge of the latest surgical techniques and to improve the efficiency of our working environment. The primary focus however, of the perioperative nusing team, is to ensure absolute safety of our patients. This safety is only possible through extensive education and training specific to the surgical procedures together with the combined experience of the nursing team involved.

Because laparoscopic surgery has become increasingly complex, perioperative nurses have been required to develop a greater understanding of the equipment, instruments and surgical techniques used by laparoscopic surgeons. With this knowledge it is possible to adequately prepare the operating theatre environment to a level that is conducive to safe surgery.

For laparoscopic surgery, the perioperative nursing team generally consists of a scrub nurse and up to two circulating nurses with one member designated as nurse team leader. Prior to surgery this team will prepare the operating theatre with equipment, instruments and consumables essential for the surgical procedures. Maintenance of equipment and organization of surgical instruments for sterilization are significant considerations at least one day prior to the scheduled surgery. During surgery the nursing teams work together with the surgeon and anesthetists to maintain optimal safety for our patients. Each nurse team member has specific responsibilities. The scrub nurse works together with the surgeon and the surgeon's assistant providing the correct surgical instruments and materials necessary to perform a specific surgical procedure within the sterile field. This nurse may also assist in laparoscopic camera operation as necessary. Circulating nurses are also vital members of the team, as the scrub nurse liaises with and relies on the circulating nurses to connect equipment such as camera systems and also to provide any additional instruments and materials required during the surgery. The circulating nurses will also complete documentation related to the surgery.

Although the perioperative nurses do not perform any surgery themselves, they are required to possess knowledge that enables them to comprehend surgical procedures. Laparoscopic surgery is unique in comparison to open surgery because the nursing team shares the same direct view of the surgical site as the surgeon. Together with knowledge of the surgical procedure, this direct view enables the nurses to anticipate the needs of the surgical team and to plan their requirements without unnecessary delay.

Unique Skills

With the continuing advancements in laparoscopic surgical techniques and the introduction of new equipment, Perioperative nurses require constant thorough training to maintain their skills to current levels. Because many operating theatre departments experience a turnover of nursing staff members, a continuing orientation and education programme is necessary to maintain high standards of patient care in the operating theatre.

The perioperative nurses form an integral part of the theatre team including surgeons, assistants, anesthetists, OPD's and porters. Together with our unique skills combined, we are able to provide patients optimal care within the operating theatre environment.

Uterine Artery Embolisation for the treatment of fibroids - a patient experience

By Ginette Camps-Walsh, Chairman CIM Medical Group

The latest research shows that over 70% of white and 80% of black women have fibroids. Despite this I knew nothing about them until my own diagnosis.

I had an increasingly large stomach, so large that I couldn't bend over easily and sitting down was uncomfortable. My periods were very painful and quite heavy, lasting 14 days, but I put this down to one of the joys of growing older. I also had urinary urgency and occasional sciatica. On holiday three years ago, my husband, rubbing suntan lotion into my stomach, said 'this isn't fat' it's all hard and you've got a large lump down your right hand side'. Then I sought medical help.

I feel like a much younger and healthier woman

I immediately thought of ovarian cancer and went to my GP in a panic. As soon as she examined me she leapt out of the room and arranged an immediate ultrasound scan. The NHS worked superbly for me; I just walked straight across the grass from the GP surgery to the John Radcliffe hospital and had an immediate ultrasound scan. I was told, to my huge relief, that I had many large fibroids and an enlarged kidney, not cancer.

Hysterectomy no option for me

My GP said I would probably need a hysterectomy and some GnRH antagonists as a pre-treatment, because the fibroids were so large. I told her I would not be happy to have drug treatment, since this could affect the intellect and short-term memory and I felt hysterectomy was dangerous.

From previous research, I knew that the DVT and death rate from hysterectomy is relatively high, it is a very invasive operation with a very long recovery time and also causes sexual dysfunction. I had worked very hard to become a director of a healthcare company and could not afford months off work.

I had run a medical company specialising in radiology and had seen embolisation used to treat an aneurysm in the brain. I knew the same technique could be used to treat inoperable cancers. My GP was surprised when I asked if fibroids could be embolised. She advised that a Dr Cowan in Oxford might be offering this

I went home and did extensive research on the Internet, looking at clinical papers and web sites on fibroid treatments. Uterine artery embolisation [UAE] had started in France in the late 1980s. Patients had been embolised prior to hysterectomy to reduce haemorrhaging. Many then refused the surgery, as their symptoms had disappeared. A similar technique has also been used at least a decade before this for treating postpartum haemorrhage. Nature's version of UAE 'red degeneration' occurs mainly in pregnancy.

The procedure is carried out by an interventional radiologist in an angiography suite. No general anaesthetic is required. It normally takes 60-90 minutes and requires a 1-night hospital stay, with return to work in 2-5 weeks. Large fibroids of at least 24 cm have been successfully embolised. Fertility is maintained and a number of women have had successful pregnancies after embolisation.

The treatment is effective in 93-97% of patients. A few patients (0.25-7%) will go on to have hysterectomy because of infection (1%) or insufficient reduction in fibroid size. 5-7% of patients expel fibroids. Mortality is approximately 6-10 times lower than with hysterectomy. Morbidity is much lower too – no surgical trauma to adjacent organs, early menopause necessitating HRT, urinary incontinence, sexual dysfunction or depression.

The gynaecologist said my uterus was the size of a 34-week pregnancy and I had at least two large fibroids. The treatment options were - hysterectomy, myomectomy (although he wasn't keen on doing that unless I wanted children) and embolisation. He couldn't tell me what effect hysterectomy would have on my sex life and said he wouldn't know until he opened me up whether he would need to remove my cervix or not. Much to his surprise I opted for embolisation.

Most gynaecologists do not tell women about UAE, and some women have to be very assertive to be referred for UAE.

Four large fibroids

Dr Nigel Cowan, the interventional radiologist, gave me an MRI scan. It showed that I had four very large fibroids, three of which were over 10cm. None were pedunculated subserosal types, for which embolisation was then contraindicated. I agreed to go ahead. Dr Cowan gave me a very comprehensive presentation on the treatment of fibroids, a detailed explanation of UAE and also briefed me thoroughly on the possible complications and side effects. The fibroids would shrink by 60% and I hoped this would be enough. [Research now shows that fibroids continue to shrink after a year and some disappear all together.]

Home by next morning

I'd been in angiographic suites many times to see treatments on others, so the whole experience was a bit surreal. I was conscious and fascinated with what was going on and a bit frustrated that lying flat I couldn't see much. With diazepam and diamorphine, I felt no pain when the angiographic catheter was inserted, just a warm flowing sensation when the contract medium was injected. I needed three times the normal dose of embolic particles, because the fibroids were so large. Immediately the second side was embolised I felt cramping pain, which grew worse. I spent a rough night with large doses of diamorphine, which was gradually tailed off to paracetamol by morning. I showered, dressed and went home the next morning feeling bloated. I was given some NSAIDs and analgesics, although my pain had completely gone by the next day.

Recovery from embolisation is very variable. I learned later that one woman went to a party the day after. I had a bit of a tough time, not helped at all by getting a bad viral infection with a cough. This is not a good idea coupled with the inflammatory response from the

embolisation - my temperature fluctuated for some weeks.

I returned to work in 5 weeks, much later than the normal 2 weeks or the tough Americans in a few days.

Three fibroids expelled

My recovery was quite eventful. Three months after the embolisation I had great pain, like labour pain and expelled a fibroid. This happens in 5-7% of patients. It was so large it needed some help from the gynaecologists to pull it out and the slight infection, treated with antibiotics. Normally fibroids are expelled within the first month. A month later, with no pain, I also expelled another fibroid, with some assistance, but a third fell out all my itself. Three expelled fibroids are apparently a record! I was very pleased to be rid of them, as my main concern was whether they would shrink sufficiently.

Now after 3 years my periods are much lighter with no pain and no need for analgesic. I am much slimmer, my kidney and uterus have returned to their normal size and have started playing squash again. I feel like a much younger and healthier woman and have no scar or adverse side effects. I couldn't recommend UAE highly enough.

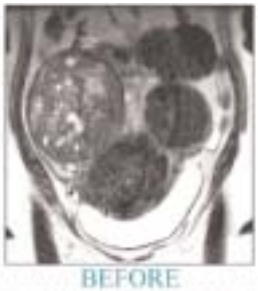
Over 30,000 hysterectomies are performed every year for the treatment of fibroids, many requiring further treatment. The Department of Health wants to reduce the numbers of hysterectomies and the NICE Clinical Guidelines Review of hysterectomy and alternatives is about to start.

There are now over 50 centres in the UK offering UAE and this number is growing all the time. In London all the teaching hospitals and most of the larger private hospitals offer UAE. There have been over 3,000 UAE procedures in the UK and about 75,000 worldwide.

I was so delighted with my results that we started a patient group FEmISA – Fibroid Embolisation: Information, Support & Advice to help to ensure that women had access to embolisation and to support them.

Ginette Camps-Walsh

UFE - MY FIBROIDS



BEFORE

- UTERUS 34 WEEKS - LOOKED PREGNANT
- 4 LARGE FIBROIDS
- ENLARGED KIDNEY
- PERIODS - 14 DAYS V PAINFUL
- URINARY URGENCY
- OCCASIONAL SCIATICA
- INDIGESTION - BULK SYMPTOMS
- DIRECTOR HEALTHCARE COMPANY

UFE - MY FIBROIDS

AFTER UFE

- UTERUS NORMAL SIZE - MUCH SLIMMER
- PERIODS LIGHTER 5 DAYS NOT PAINFUL
- KIDNEY NORMAL SIZE - NO URINARY URGENCY
- NO SCIATICA - PLAYING SQUASH
- BULK SYMPTOMS GONE
- OVERALL IMPROVEMENT IN HEALTH
- FEEL YOUNGER!
- WOULD HAVE UFE AGAIN
- RECOMMENDED TO MANY

For further details please see our web site www.femisa.org.uk
Other web sites of interest –
British Society of Interventional Radiology www.bsir.org
Fibroids Uterine Embolization - Dr. Nigel Cowan, Churchill Hospital, Oxford: http://www.fibroids.me.uk
Fibroids Embolization - Dr. W.J. Walker, Fibroids Embolization Specialist, Royal Surrey Hospital, Guildford http://www.fibroids.co.uk

UFE the method

Uterine fibroid embolization (UFE) is a treatment for uterine fibroids in which a material injected into the uterine artery blocks blood flow to the fibroid, causing it to shrink and eventually die.

Detailed Description

A small nick is made at the groin and the femoral artery (the large artery that runs the length of the femur, or thigh bone), and a tube called a catheter is inserted into the femoral artery and fed into the uterine artery. The catheter is guided using special x-ray imaging called fluoroscopy. Once the catheter is in place, tiny particles called polyvinyl alcohol material (PVA or emboli) are injected into the uterine artery. Polyvinyl alcohol material is made up of plastic particles, each about the size of a grain of sand, which travel through the uterine artery and block blood flow as the artery narrows, cutting off the blood supply of the uterine fibroid. The polyvinyl alcohol material is injected until all the blood vessels flowing to the fibroid are completely blocked. Once the blood supply to the fibroid is blocked, the fibroid stops growing and dies.

After treatment, patients will experience some discomfort (pain or nausea), and vaginal bleeding or passing of fibroid tissue (if fibroids are in the inner uterine lining) may occur. Also, patients may experience irritation or bleeding at the incision site. In rare cases, patients have suffered infections, prolonged pain, fever, damage to the reproductive tract, or buildup of dead tissue in the uterus, which may require antibiotics or a D&C (dilatation and curettage) procedure to remove tissue that is not being absorbed or passed by the body. There is also concern among some that the exposure to radiation during the procedure places patients at risk, though research so far has not proven that this is the case.

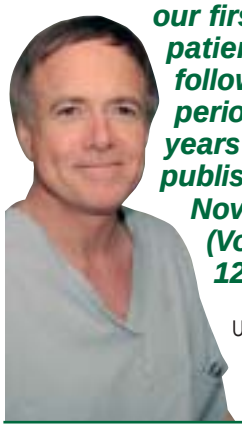
During the UFE procedure a catheter is inserted through the skin, into the femoral artery and ultimately into the uterine artery.

Small particles, PVA emboli, are injected through the catheter and flow into the branches of the uterine artery and prevent blood from reaching the tumors.

Fibroids and the radiologist

Dr Woodruff Walker, Consultant Interventional Radiologist, heads the worlds largest single centre trial for Fibroid Embolisation

At the Royal Surrey County Hospital and The London Clinic, we are conducting the largest single centre trial for Fibroid Embolisation. Since our trial began in December 1996 we have carried out 960 procedures. An analysis of our first 400 patients with follow up for a period of four years was published in BJOG, November 2002 (Vol.109 pp 1262-1272).



Uterine fibroid embolisation was first carried out sporadically in France in the early 1990s. The first series of uterine artery embolisation was published in the Lancet in 1995. Over 45,000 embolisations have now been carried out world wide.

The procedure itself which is carried out under local anaesthetic and intravenous sedation is relatively painless. It involves the insertion of a small catheter into the femoral artery in the groin. Then under X-ray TV control, the catheter is manipulated into the two arteries that supply the uterus. Tiny particles (like grains of sand) 355-500 microns in size of PVA (polyvinyl alcohol) are injected through the catheter into the arteries. These particles pass selectively to the vessels supplying the fibroids, these vessels become silted up thereby depriving the fibroid of blood which infarcts and shrinks, or in the case of some submucous fibroids, may be expelled through the vagina.

Following the procedure patients usually experience pain over the next 12 to 24 hours. The pain varies from mild to severe which needs treatment with heavy doses of oral analgesics. The patient spends two nights in hospital and should be off work for one to two weeks.

There are, however, complications of the procedure; a small number of patients between 0.5 to one per cent of infection leading to hysterectomy and two per cent of our patients required hysteroscopic resection of impacted fibroid material, and a number of patients also may develop troublesome vaginal discharge requiring hysteroscopy.

Our figures show a success rate for the procedure of more than 85 per cent with average fibroid shrinkages above 60 per cent and patient satisfaction rates at more than 90 per cent. Fibroid embolisation does appear to have a significant success rate in a properly selected group of patients where the gynaecologist and radiologist work together as a team.

Pregnancy data, after embolisation world wide, is still restricted but in our series we have had 37 pregnancies most of which have been successful or ongoing.

For further detailed medical information on the results of our trial on fibroid embolisation visit our website www.fibroids.co.uk

Uterine Artery Embolisation - a practical versus the rose tinted approach (managing expectations)

By Dr John Reidy

Since uterine artery embolisation (UAE) first emerged in 1996 as a uterus- conserving minimally invasive alternative to surgery there has been considerable interest by women, much enthusiasm by radiologists and a cautious concern by gynaecologists. If a radiologist is to perform these procedures it is essential to work in close co-operation with a gynaecologist.

Fibroids are very common in women and their prevalence increases up to the time of the menopause. A majority of fibroids are asymptomatic and as such no treatment is indicated. A gynaecologist will usually make the diagnosis of fibroids based on a clinical history and examination, supplemented by an ultrasound study and will make a clinical judgement that the fibroids are responsible for significant symptoms. Only when this has been established should any form of treatment be considered.

It is important to remember that the symptoms of fibroids are non-specific and that other pathologies may co-exist. Also, in UAE unlike surgery no pathological specimen is obtained and there is always the rare spectre that a condition such as a uterine sarcoma could be missed. Some have advocated MRI as part of the routine assessment but there are cost implications and many would not consider it to be necessary.

Once a decision has been made that the fibroids are causing significant symptoms, many women will choose not to have a hysterectomy for a variety of reasons. These include a wish to keep their womb, sometimes associated with the desire for a possible future pregnancy and also wanting to avoid the morbidity and long convalescence associated with surgery. Once a woman has decided that she does not want a hysterectomy there are only limited options available. Medical treatment has no role except prior to surgery and new treatments such as MRI guided laser and ultrasound ablation techniques are only of very limited availability. The practical choice then lies between a myomectomy and UAE.

The great majority of myomectomies are performed via the abdominal route and not all gynaecologists are enthusiastic about the technique. Clearly where there are a small number of fibroids and these are on the outside of the uterus a myomectomy might be more suitable but multiple fibroids in a submucous location are much more difficult to deal with. Myomectomy essentially treats each fibroid individually whereas UAE by occluding the blood supply to most of the uterus has a global approach and will treat all the fibroids.

There are no treatments for fibroids which guarantee success and that do not carry some risk and UAE is no exception. The results of 2 randomised controlled studies are awaited but the data from uncontrolled studies suggests that around 85% of women are happy with the result of their embolisation procedure. The procedure necessitates an overnight admission as a result of pain that occurs immediately after the procedure which usually needs strong analgesics.Significant complications are rare the most severe being infection that leads to a hysterectomy in about 1%.It is important that the referring gynaecologist has knowledge of the procedure as in addition to routine followup there are sometimes concerns and occasionally ancillary procedures may be needed after UAE. There are concerns about fertility after UAE and especially in younger women but data are emerging that suggest that normal pregnancy can occur similar to that in post-myomectomy women.

UAE has a very definite role to play in the management of women with symptomatic fibroids.When woman chooses not to have a hysterectomy UAE should be considered along with a myomectomy. Ideally the Gynaecologist should have a working knowledge of UAE as well as being able to offer myomectomy.For the interventional radiologist it is important the women are given detailed information about the procedure and its risks and expectations.Also the radiologist must be available to answer any questions or concerns they might have about UAE.

Pre-Operative hormone therapy before hysterectomy or myomectomy

Fibroid growth is stimulated by oestrogen, and gonadotrophin releasing agonists (GnRHa) which induce a state of hypoestrogenism have been investigated as a potential treatment. GnRHa treatment causes fibroids to shrink but cannot be used long term because of unacceptable symptoms and bone loss. Therefore GnRHa may be useful pre-operatively both to reduce fibroid and uterine volume and control bleeding.

In a review of clinical trials to asses the value of GnRHa 1, the following results were recorded:

- pre- and post-operative haemoglobin and haematocrit were significantly improved prior to surgery
- uterine volume, uterine gestational size and fibroid volume were all reduced
- pelvic symptoms were also reduced but some adverse events were more likely during GnRHa therapy
- hysterectomy appeared to be easier
- less operating time for hysterectomy and more patients were able to have a vaginal rather than an abdominal procedure
- reduced hospital stay
- blood loss and rate of vertical incisions were reduced for both myomectomy and hysterectomy

The main effects of this treatment are the temporary control of bleeding and a reduction in fibroid and uterine size. However, side effects include menopausal symptoms and bone loss with long term use. After therapy is stopped, there is regrowth of both the fibroids and the uterus almost to their pretreatment size and a recurrence of symptoms. Therefore, although the role for these agents as a sole approach is limited, there is clearly a useful role in their use as a pre-operative adjunct to surgery.

Myomectomy had advantages for those women who wish to preserve or enhance their fertility, but is regarded as a more difficult procedure. the method must be distinguished in the evaluation of pretreatment with GnRHa. There are advantages associated with reduced blood loss during the operation, ease of operability and better anatomic reconstruction, but there is also a concern that the fibroids may not 'shell out' cleanly. Pretreatment of patients with GnRHa prior to hysterectomy has been advocated for patients with severe anaemia and in order to reduce blood loss. Other indications have included large fibroids or other factors that may make surgery technically difficult. Pretreatment may also enable the greater use of more conservative surgical options.

1. Lethaby A, Vollenhoven B, Sowter M. Pre-operative GnRH analogue therapy both hysterectomy or myomectomy for uterine fibroids (Cochrane Review). In: The Cochrane Library, Issue 2, 2003.

Bead Block: New innovative embolic microsphere

Bead Block™ a product of British-based medical device company Biocompatibles (BII:FTSE) is a precisely calibrated, compressible, visibility-tinted microsphere made from polyvinyl alcohol (PVA), an established material in embolisation therapy. Interventional radiologists use embolotherapy to block blood flow to tumours or vascular malformations. Embolotherapy has become a minimally invasive treatment alternative for conditions such as uterine fibroids, for which hysterectomies are often performed

"Bead Block will be a valuable addition to the interventional radiologists' portfolio," said Doug Redd, MD, Chief of Vascular & Interventional Radiology at Emory University Hospital in Atlanta, Georgia (US).

"PVA has been used safely in the body for decades and calibrated microspheres have become a preferred design standard for embolisation, because they are less likely to aggregate in the delivery catheter than is particulate PVA. Sizes of the microspheres can also be chosen to selectively occlude a vessel of a specific diameter. Because Bead Block is made from a PVA hydrogel, this embolic agent also has the added benefit of compressibility, making delivery through a microcatheter easy and reliable."

Bead Block received CE Mark approval in June 2003 and in the US Bead Block has FDA clearance for the treatment of hypervascularlized tumours and arteriovenous malformations.

Biocompatibles markets its Bead Block through its' distribution partner Terumo Corporation. Terumo is a global medical technology company based in Japan that supplies a range of products for angiography, cardiology, cardiovascular systems and other medical products. Terumo has an established presence in the interventional radiology community and is recognised as a provider of excellent products and services.

Bead Block is currently marketed in the the US and Europe and is expected to be launched in the Far East later this year.

Uterine Artery Embolisation - A gynaecologists View *By Mr Adrian Lower FRCOG*

Uterine artery embolisation (UAE) is a useful technique for dealing with fibroids in certain cases where a woman wishes to avoid the risks of surgery. It should not be regarded as the only option and fits into a range of potential treatment options for this most common of gynaecological conditions. UAE is not without risk itself and as yet we are unsure of the long term outcome or whether there are any adverse effects as far as pregnancy is concerned. We do know that a number of women have conceived after UAE and have had satisfactory pregnancies and deliveries but we do not know if there are subgroups that we may be able to identify who may not be able to conceive or who are likely to develop problems. There have been complications associated with serious infection and very large fibroids may not be so suitable for embolisation.

At present UAE is still regarded as an experimental procedure although large numbers have been performed. It is important that a register is kept of women undergoing UAE so that they can be followed up and we can see how many of those who wish to conceive are able to do so.
I think it is important for a woman with fibroids to be assessed by a gynaecologist with close links to an interventional radiologist so that women who are most suitable for the procedure can be identified and those who are not can be offered alternatives such as laparoscopic or hysteroscopic myomectomy, which offer a minimal access approach and thus address some patients objections to surgery.

In our experience UAE is ideal for women with larger submucous fibroids which can be very difficult to resect and can require two or three procedures before the fibroid is completely removed. Typically these are the fibroids which will pass spontaneously after UAE. The other type of fibroid which does well with embolisation is the larger interstitial fibroid especially when multiple fibroids are present. These will often reduce in size dramatically and symptoms can completely resolve. Exophytic subserous fibroids do not respond so well to UAE and are more likely to give rise to infection.

We have also employed UAE in combination with myomectomy. The embolisation procedure being performed first and then the patient is taken to theatre on the same day for a standard myomectomy either open or laparoscopic depending on the size of the fibroids. UAE enables the surgeon to operate in an almost bloodless field whch enables him to remove the larger, exophytic fibroids more safely. He can also not worry about the smaller fibroids which may be situated deep in the myometrium since these will shrink away later. The pictures below show one such massive complex fibroid which was easily dealt with following embolisation. There is a large 10cm in diameter broad ligament fibroid and an 8 cm anterior wall fibroid arisng from the lower segment and another exophytic fibroid of 8cm below that. The fundus of the uterus can be seen close to the surgeons index finger with a normal left Fallopian tube arising from the cornu and stretched over the broad ligament fibroid. The appearance of the uterus after surgery is demonstrated in the second picture. This patient conceived after only a few months of unprotected intercourse 18months after surgery.

For more information about the various options for management of fibroids visit the London Fibroid Clinic Website at www.fibroidspecialist.co.uk.

Complex multi-fibroid uterus before

Complex multi-fibroid uterus after