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EDITORIAL

Perspective in endometriosis—the challenge of conservative surgery

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Editorial

One of the challenges of endometriosis is the prompt and accurate diagnosis of the disease, which is of great importance in order to avoid long delay before possible surgical management.

Endometriosis is a progressive disease [1] that does not regress spontaneously and tends to aggravate with time, suggesting early surgical intervention. The appropriate time to operate is proposed when the symptoms interfere with the patient's quality of life.

The different symptomatology of pelvic pain has been correlated with the anatomical location of deep infiltrated endometriosis [2]. Under experienced hands gynaecological examination can detect severe endometriosis particularly on the posterior vaginal wall and uterosacral ligaments. It was suggested [3] that symptom profile questionnaires associated with or without clinical examination may be useful to suspect endometriosis but need appraisal and validation.

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New advances in endometriosis physiology demonstrate that endometriotic cells present similarities with tumour cells concerning tissue invasion, infiltration and angiogenesis. It is crucial to perform a preoperative locoregional evaluation of the extent of the disease in order to decide on a possible conservative or radical surgical approach. Complementary examination should be systematic including imaging techniques in order to assess a possible multidisciplinary approach. The conservative surgical approach is defined as removal of all endometriotic lesions preserving normal anatomy and it is possible in cases of endometriosis-related infertility or pelvic pain (either cyclic or chronic). Different instruments and types of energy are used to excise or ablate endometriotic lesions. Well-designed randomized controlled clinical trials comparing tissue damage, intra-operative risks and depth of local destruction have not been well elucidated. The choice of a technique is therefore operator dependent based on patient safety, hospital cost, availability and the surgeon's experience. Scoring systems have been used in the past during diagnostic laparoscopies; however, it is known that they do not quantify the severity of the patient's symptoms. A consensus about a uniform scoring system for surgery is necessary in order to assess the method and technique used, the location of a possible recurrence and adhesion formation. The modern advances of medical illustrations can add up to this future evaluation and should be readily available in all laparoscopic surgical procedures and particularly when patients are referred to tertiary centres.

The conservative approach has not been clearly evaluated concerning the overall patient morbidity and quality of life in the long term in comparison with radical surgery. Intraoperative and postoperative complications are not always less severe with conservative surgery. It is absolutely important that during the first operative laparoscopy

all endometriotic lesions should be treated. The goals of conservative methods are to cure or prevent any further extension of the disease. As it is impossible to detect all microscopic lesions, possible further operations may be necessary and in these cases conservative surgery is more difficult to perform due to possible postoperative severe adhesions and distortion of normal anatomy. The conservative approach is indicated more for young patients attempting to preserve their fertility.

It seems that conservative surgery improves spontaneous conception rates not only in cases of mild to moderate endometriosis but also in severe endometriosis.

Concerning large (>4–5 cm) endometrioma management there is no evidence that spontaneous pregnancy rates are higher when the cystectomy is performed with a two-step procedure. The risk of premature ovarian failure following endometrioma excision or ablation has been extensively debated; however, the vast majority of surgeons treat such cases in a one-step operative laparoscopy [4] (Fig. 1). The outcomes of in vitro fertilization (IVF) treatment after conservative surgery is under evaluation, but from retrospective cohort studies it seems that pregnancy rates are not influenced by the operative technique [5]. Neither does the recurrence of endometrioma prior to IVF procedures impair the IVF pregnancy rate. Therefore it is suggested that repeated and more risky conservative surgery be avoided. Nevertheless in the case of pregnancy the persistent endometrioma could be misdiagnosed as a pseudo-malignant tumour due to the decidualisation of the cyst wall indicating a radical surgery (Fig. 2).

Rectovaginal endometriosis without bowel and ureteral involvement can be underdiagnosed in an early stage when it is asymptomatic or when vaginal examination did not include a search for deformities, irregularities and nodules on the posterior vaginal wall and uterosacral ligaments.

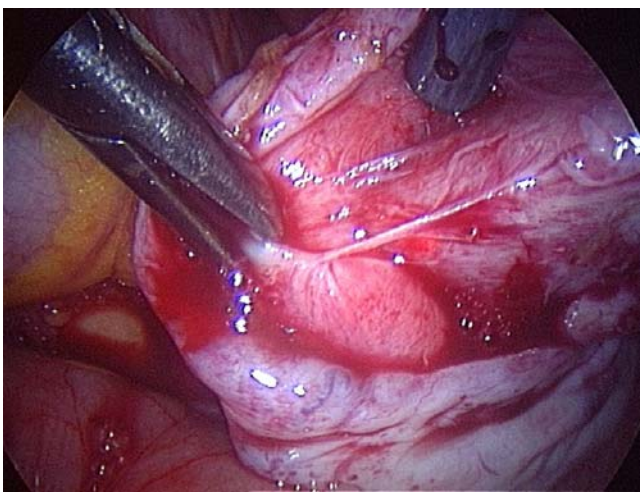

Fig. 1 Stripping of a large endometrioma

Different principles of treatment were established in the past with the "shaving technique", laser ablation, concomitant excision of the lesion and part of the vaginal wall. There are neither randomized controlled trials comparing these techniques nor databases of recurrence.

The challenge is not only to use an appropriate technique but to evaluate its effect in long-term follow-up. It is imperative that quality of life and morbidity be evaluated in order to thoroughly inform the patient prior to any surgery [6]. The chronic pain symptomatology caused by endometriosis is difficult to assess.

If conservative treatment is chosen then a follow-up with validated quality of life questionnaires, database about pain relief and thorough clinical examination need to be systematically organised. Data of cohort series usually lack consistency and their surgical results reflect the practice of specific experienced laparoscopists (who work in tertiary centres under optimal conditions) and do not reflect the current general gynaecological practice. Very few colleagues operate rectovaginal endometriosis and even very few are appropriately trained to do so.

The challenge is to continue the work of the pioneering endoscopic gynaecologists. If surgeons do not have the confidence to undertake such a type of surgery or are not well trained, the danger for the patient is a worsening endometriotic disease or an incomplete resection with persistence of endometriosis. Long-term follow-up will help us to evaluate the usefulness and efficacy of conservative management and to critically appraise each technique correlating degree of endometriosis extension, local destruction and type of energy used.

The challenges for conservative treatment are numerous. It is crucial to determine adapted surgical techniques for the different stages of endometriosis.

Adhesion prevention is under evaluation but we lack evidence concerning which anti-adhesion product to use and when.

The feasibility of operations depends directly on the laparoscopic theatre set-up and availability of appropriate instruments. Numerous experienced laparoscopists may need to adapt their techniques due to the lack of equipment which may compromise an optimal surgery.

Patient consent should be based on the available data of the local hospital, evaluating the efficacy of the surgical treatment. Continuous audits and reviews of the current practice is paramount for this purpose. However, it is yet not an established principle of current practice in Europe. That is why results and techniques should be interpreted with caution when studying results from different centres even in the same European country. Operative complications are not always mentioned and homogeneously studied. A European registry of laparoscopic complications could provide a clearer picture of the problem. It is

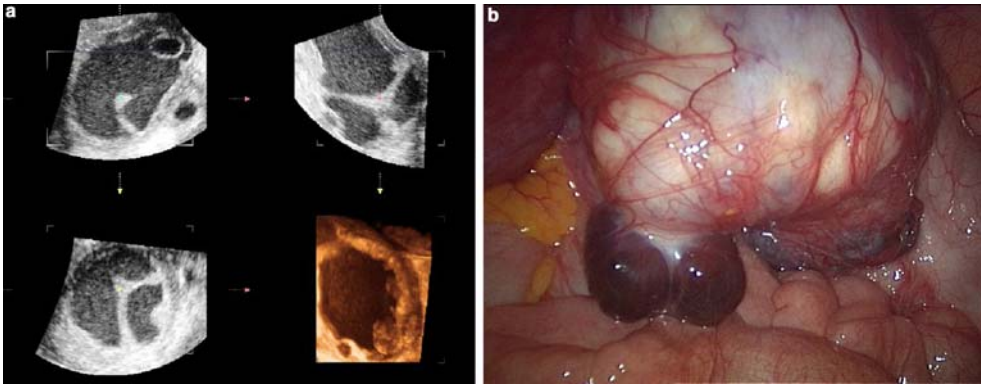

Fig. 2 **a** Ultrasound images with suspicion of malignant changes. **b** Laparoscopic view of the endometrioma prior to adnexectomy

important to evaluate the overall health care cost of conservative surgery versus the medical or radical approach. Business management plans for investments in modernised laparoscopic centres should provide an answer to this question.

The need for a multidisciplinary approach has become increasingly evident in recent years, especially for endometriosis. A multidisciplinary approach includes gynaecological endoscopists as well as colorectal and urological surgeons. The organisation of endometriosis or pain clinics could attract a more prevalent population hoping for a faster diagnosis and treatment. What is difficult to determine is who must organise them. Which health care authority should be responsible? Is it the ministry of health, the local health authorities or the European gynaecological endoscopy societies? Standards of care should be well established and be homogeneous in Europe. A referral network should be structured and GP awareness of these centres and clinics is essential. The conservative surgical approach needs audits, further research including evaluation of the overall performance of the surgeons and collaboration of gynaecologists (consultants to operate together). This can be facilitated by working in specialised clinics and centres. The criteria of who can be involved and work in such clinics are completely heterogeneous in Europe.

As it concerns training in laparoscopic surgery the situation is quite stressful because the recent developments in medical training systems do not allow protected training hours for juniors (European working hours law). Few junior doctors are adequately exposed to and experienced in conservative surgery for endometriosis. Moreover doctors of an older generation never audited and criticised their own results and they may have poor skills for training input. New "trainers" have to validate their skills. The production of trainers is poor because it is excessively time consuming, not well paid and based on the enthusiasm and interest of a few voluntary colleagues who follow a trainer carrier. Another challenge is the question of whether we all do need to perform laparoscopic surgery at an advanced level or not?

Laparoscopic gynaecological surgery is not recognised as a sub-speciality among the European countries because there is a tremendous variety of performance skill and standards of training. It seems that it is not the number of surgical procedures that should count but an evaluation of performance. Virtual means, models and workshops for practice are proposed in order to accelerate the acquisition of skills. However, it is unknown how many "trainers" use them and how many trainees have been validated on them. Initial reports have shown beneficial influence using training models on undergraduate trainees. There is no known experimental model for surgical practice concerning endometriosis. Finally expert committees may request the use of DVD videos as proof of competence for junior and advanced trainees.

Future perspectives for the conservative surgical management of endometriosis are also numerous. New techniques that help to identify microscopic lesions will theoretically maximise the efficacy of early and complete ablation of endometriotic lesions. Further development of energies and technologies after evaluating their cost efficacy may provide new techniques of surgery safer for the patient and more comfortable for the surgeons. The development of laparoscopic assisted nerve sparing (neuronavigation) could be another future application decreasing the rate of postoperative complications [7]. Robotic surgery is a new domain of future laparoscopic development. It is unknown if application would be attempted for conservative surgery and deep endometriosis. The use of new adjuvant (or post-surgery) medical treatment such as aromatase inhibitors [8], selective progesterone receptor modulators (SPRMs), MMP and angiogenesis inhibitors may improve the results of the surgery and perhaps delay recurrence for a long time.

From this editorial one is for sure that a huge amount of work is needed in order to adapt our practice according to evidence-based medicine. Optimal training, well-designed studies and continuous up-to-date education and validation of our skills are paramount elements in our discipline of

gynaecological endoscopy in order to treat our patients in the most appropriate way.

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