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SURGICAL SHORTCUTS WITH COMMENTARY

Recent literature

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An intriguing hypothesis that needs scientific validation

Creus M, Fábregues F, Carmona F, Del Pino M, Manau D, Balasch J.
Combined laparoscopic surgery and pentoxifylline therapy for treatment of endometriosis-associated infertility: a preliminary trial. Hum Reprod. 2008; 23: 1910–6

Objective: Surgical treatment has modest efficacy for the treatment of infertility associated with early stage endometriosis. Immunomodulation with pentoxifylline is considered as a new strategy potentially useful in treating endometriosis. Thus, this study investigated the usefulness of combined laparoscopic surgery and pentoxifylline therapy in the treatment of infertility associated with minimal to mild endometriosis.
Methods: A prospective, randomized, controlled blind trial was conducted. Patients entered the study immediately after laparoscopic surgery and were randomly assigned to the treatment with either oral pentoxifylline (800 mg/day) (pentoxifylline group, $n=51$) or an oral placebo (placebo group, $n=53$). Patients were then observed for pregnancy for 6 months.
Results: Among 98 patients finally considered in the evaluation of the results, the 6 month overall pregnancy rates were 28% and 14% in the pentoxifylline and placebo groups, respectively. Thus, an absolute difference of 14% (95% CI −2 to 30; Chi-squared test, $P=0.1$) in the cumulative probability of pregnancy in 6 months after laparoscopic surgery in patients receiving pentoxifylline versus placebo postoperatively was observed.
Conclusion: Our findings provide preliminary clinical evidence to suggest the new experimental treatment approaches, toward endometriosis, that are based on immunomodulation deserve further attention. Well-designed multicenter trials are warranted to confirm or refute our results.

COMMENTARY

The study by Creus et al. is a randomized clinical trial on the efficacy of oral pentoxifylline after surgical treatment of minimal-mild endometriosis in infertile patients. One hundred and four patients were randomized after operative laparoscopy to either oral pentoxifylline (800 mg/day) or placebo for 6 months. At the end of the 6-month period, 98 patients were evaluated. Thirteen pregnancies were obtained in the pentoxifylline group (28%), and seven in the placebo group (14%). The authors conclude that immunomodulatory therapy with pentoxifylline alone (based on a previous study by the same group) or after laparoscopic surgery may be a potentially useful treatment in early stage endometriosis-associated infertility.
The study by Creus et al., however, although elegant and a must-read, lacks the power to substantiate these conclusions. Even if the absolute difference in pregnancy rates between the two groups is 14%, in favor of pentoxifylline treatment, statistical significance is not reached in the study. The authors did not perform a power study to assess the numbers of subjects to be enrolled, but state that a sample size of 2,500 would be necessary to detect a clinically significant difference of at least 5% in pregnancy rates. In the Endocan study, 330 patients were deemed necessary, with approximately the same premises of the present study, and a significant difference, in fact, came out from that study. The figure of 2,500 is therefore possibly an overestimation, whereas a sample size of 98 is more probably underpowered. I do believe that the underpowered sample size of the study by Creus et al. does not therefore permit any sound conclusion on the efficacy of pentoxifylline at the present time, or if a conclusion must be drawn today, this conclusion must be that pentoxifylline is not effective in the treatment of endometriosis-associated infertility (with the possibility that this latter conclusion be flawed by a type II error).

In the literature, a similar study by Alborzi et al. concludes differently from what Creus et al. conclude in their study, in the sense that Alborzi's study report pregnancy rates of 40% and 36%, respectively, in the pentoxifylline versus control group, which represent a nonsignificant difference. Further studies with larger sample sizes, or a meta-analysis of randomized studies, are therefore needed to assess the efficacy of pentoxifylline treatment of endometriosis-associated infertility. At the present time, therapy of endometriosis with an immunomodulator, such as pentoxifylline, remains an intriguing hypothesis that needs scientific validation.

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Duration of catheterization is limited by the resources of the fistula centre

Nardos R, Browning A, Member B.
Duration of bladder catheterization after surgery for obstetric fistula. Int J Gynecol Obstet 2008; 103: 30–2

Objective: The objective of the study is to compare the surgical outcome at discharge and at 6 months follow-up in patients who underwent repair of obstetric fistulae with postoperative bladder catheterization for 10, 12, or 14 days.
Methods: A retrospective study of 212 obstetric fistula patients who underwent repair with postoperative bladder catheterization for 10 days (group 1), 12 days (group 2), and 14 days (group 3) at the Bahir Dar Hamlin Fistula Center in Ethiopia. Fistulas were classified according to Goh's system.
Results: There were 68 women (32%) in group 1, 62 women (29%) in group 2, and 82 women (39%) in group 3. There was a significant difference in the extent of urethral involvement, fistula size, and degree of vaginal scarring among the three groups, with the more extensively damaged patients catheterized for longer. Breakdown of repair was seen in 1.5% of patients in group 1, none in group 2, and 2% in group 3 (P=0.47).
Conclusion: Postoperative catheterization for 10 days may be sufficient for management of less complicated obstetric vesicovaginal fistulae.

COMMENTARY

Nardos et al. describe a retrospective study about the relevance of duration of bladder catheterization following surgical repair of obstetric vesicovaginal fistula. Repair was performed in 404 patients in a centralized expert setting in Ethiopia. Out of these, 212 patients qualified for further follow-up. Fistulae were classified according to a system reported by Goh in 2004, and three groups were formed according to duration of catheterization starting with 10, 12, and finally 14 days. Group 1 included mainly mild fistulae, while group 3 comprised mainly of the severe ones. However, no clear distinction was performed. Cure rates were lowest in group 3. Therefore, it was concluded that only in mild fistulae, short-term catheterization for 10 days is sufficient, while more severe forms require a longer catheterization interval.
Even though on a worldwide scale obstetric fistulae are a common problem, they are fairly rare in industrialized countries. In any case, a vesico-vaginal fistula is a major problem compromising the patients' quality of life dramatically. Any practical hint including duration of bladder catheterization is important in order to obtain optimal results.
The present article is interesting as it describes the many problems associated with obstetric fistulae especially in an East African setting. Duration of catheterization is limited by the resources of the fistula center. If longer catheterization would be required, less patients could be treated.
Unfortunately, groups are not clearly defined, and this study is retrospective. It is not mentioned whether catheterization was by transurethral or suprapubic. The authors state that lack of resources limited the study as only those patients returned for follow-up at 6 months had urinary complaints. It seems difficult to draw any conclusion from this study for daily routine in our own setting. Fortunately enough, industrialized countries are less experienced in the management of obstetric fistulae; however, limitation of duration of catheterization should not be of any concern.

Hans Tinneberg, Giessen

Laparotomy has to be avoided as much as possible

Kluivers KB, Johnson NP, Chien P, Vierhout ME, Bongers M, Mol BW.
Comparison of laparoscopic and abdominal hysterectomy in terms of quality of life: a systematic review. Euro J Obstet Gynecol Reprod Biol. 2008 Jan;136: 3–8. Epub 2007 Dec 11

Objective: The objective of the study is to investigate the randomized studies reporting on quality of life after laparoscopic hysterectomy compared to abdominal hysterectomy.
Methods: A systematic qualitative review was performed on published studies identified by the databases PubMed and EMBASE, as well as cross-references. Randomized clinical trials on laparoscopic versus abdominal hysterectomy were assessed for the methods in which studies reported on postoperative health or quality of life as an outcome measure.
Results: Thirty papers, published between 1994 and 2004, were identified. Only seven studies, incorporating data on 1,450 patients, reported on postoperative health or quality of life. Four of these studies used eight different validated quality of life questionnaires. Two of these four studies reported significant differences between the treatment

groups, with better quality of life in the first 6 weeks after laparoscopic hysterectomy when compared to the abdominal approach. Although the main reason for performing a laparoscopic hysterectomy instead of an abdominal hysterectomy is the improvement of quality of life, only a few studies have used this as an outcome measure.
Conclusions: Laparoscopic hysterectomy performs equally or better in terms of postoperative health and quality of life in the first weeks after surgery. In the decision for an approach to hysterectomy, the advantage of better quality of life should be offset against the increased risk of complications in laparoscopic hysterectomy.

COMMENTARY

This manuscript described the quality of life of patients who have undergone hysterectomy, performed either by laparoscopy or by laparotomy. Equally or better quality of life is observed in the first 6 weeks after laparoscopic surgery in comparison to abdominal hysterectomy.
Nowadays, hysterectomy represents the most frequent gynecological surgery performed all over the world for benign or malignant indications, even if the incidence is found to be variable according to the different countries.
The total laparoscopic hysterectomy has been published for the first time by H Reich in 1989, but this technique is not yet widely carried out by gynecologists. Indeed, when hysterectomy is indicated for benign pathology, the surgical approach will be chosen according to the surgeon's preference between the abdominal, the vaginal, the vaginal route assisted by laparoscopy, or the total laparoscopic route.
If details concerning the surgical technique, histological results, and complications related to the laparoscopic approach are frequently found in the literature, on the contrary, few details on the quality of life of patients after laparoscopic hysterectomy are described. The quality of life is believed to be better after laparoscopic surgery when compared to laparotomy, but there was a real need to analyze carefully the results published in the literature and specially those of randomized controlled trials. In this manuscript, a systematic review on this topic is offered, and this is of high interest.
Nevertheless, concerning this review, some comments have to be made. No studies performed between 1989 and 1994 have been included in this review. As in four studies, the quality of life questionnaire used was not validated, the authors should have excluded those four studies from analysis.
In the data of the laparoscopic group presented in this review, no precise rate of hysterectomy totally performed by laparoscopy and hysterectomy performed vaginally but assisted by laparoscopy can be found. This distinction could be of high importance as the postoperative quality of life could be related to the importance of the laparoscopic route or to the vaginal route.
The conclusion given by the authors could be interpreted differently according to the readers. As only two of four studies have described better quality of life in the first 6 weeks after laparoscopic hysterectomy when compared to abdominal hysterectomy, gynecologists "not in favor to the laparoscopic approach" could claim that there is no advantage to learn this technique and to potentially increase the risk of complications related to the laparoscopy.
In order to prove the superiority of the laparoscopic approach, the authors should have explained more in detail the four well-conducted studies and excluded the others.
Nowadays, performing abdominal hysterectomy for benign conditions should be restricted to selected indications such as severely enlarged uterus and complex adnexal masses. The rate of abdominal hysterectomy for benign conditions should be very low, probably less than 15% of cases (personal data).
As also recommended in the Cochrane Database Systematic Review, laparoscopic hysterectomy should be an alternative to abdominal hysterectomy, but the rate of complications and especially urinary tract injuries could be increased in this laparoscopic approach (1).
In this manuscript, no information has been given on the place of vaginal hysterectomy on gynecological practice. We have to keep in mind that this route of hysterectomy is probably the most frequent route of hysterectomy (2).
In conclusion, we could recommend that laparotomy has to be avoided as much as possible. The choice of performing hysterectomy for benign condition between the laparoscopic or the vaginal route is usually surgeon-dependent.
To demonstrate a possible different postoperative quality of life between the laparoscopic and the vaginal hysterectomy, a systematic review of total laparoscopic hysterectomy and vaginal hysterectomy without assistance by laparoscopy is needed.

References:
1. Johnson N, Barlow D, Lethaby A et al. Surgical approach to hysterectomy for benign gynaecological disease (Review) Cochrane Database Syst Rev 2008.
2. Chapron C, Laforest L, Ansquer Y et al. Hysterectomy techniques used for benign pathologies: results of a French multicentre study. Hum Reprod 1999; 14: 2464–70.

Michelle Nisolle, Liège

The ovarian endometrioma may be more complex than a cyst

Hart RJ, Hickey M, Maouris P, Buckett W. Excisional surgery versus ablative surgery for ovarian endometriomata. Cochrane Database Syst Rev. 2008 Apr 16;(2): CD004992

Objectives: The objective of this review was to determine the most effective technique of treating an ovarian endometrioma; either excision of the cyst capsule or drainage and electrocoagulation of the cyst wall. The endpoints assessed were the relief of pain, recurrence of the endometrioma, recurrence of symptoms, and in women desiring to conceive the subsequent pregnancy rate, either spontaneous or as part of fertility treatment.
Methods: The reviewers searched the Cochrane Menstrual Disorders and Subfertility Group specialized register of trials (searched 3rd March 2007), the Cochrane Register of Controlled Trials (The Cochrane Library, Issue 3, 2007), MEDLINE (1966–August 2007), EMBASE (1980–March 2007), and reference lists of articles, the handsearching of relevant journals and conference proceedings, and by contacting leaders in the field of endoscopic surgery throughout the world. The Cochrane Menstrual Disorders and Subfertility Group Trials Register is based on regular searches of MEDLINE, EMBASE, CINHAL, and CENTRAL. Randomized controlled trials of excision of the cyst capsule versus drainage and electrocoagulation of the cyst were done in the management of ovarian endometriomata. Reviewers assessed eligibility and trial quality.
Results: No randomized studies of the management of endometriomata by laparotomy were found. Two randomized studies of the laparoscopic management of ovarian endometriomata of greater than 3 cm in size, for the primary symptom of pain, were included. Laparoscopic excision of the cyst wall of the endometrioma was associated with a reduced recurrence rate of the symptoms of dysmenorrhea (OR 0.15 CI 0.06-0.38), dyspareunia (OR 0.08 CI 0.01-0.51), and nonmenstrual pelvic pain (OR 0.10 CI 0.02-0.56), a reduced rate of recurrence of the endometrioma (OR 0.41 CI 0.18–0.93) and with a reduced requirement for further surgery (OR 0.21 CI 0.05–0.79) than surgery to ablate the endometrioma. For those women subsequently attempting to conceive, it was also associated with a subsequent increased spontaneous pregnancy rate in women who had documented prior subfertility (OR 5.21 CI 2.04–13.29). A further randomized study was identified that demonstrated an increased ovarian follicular response to gonadotropin stimulation for women who had undergone excisional surgery when compared to ablative surgery (WMD 0.6 CI 0.04–1.16). There is insufficient evidence to favor excisional surgery over ablative surgery with respect to the chance of pregnancy after controlled ovarian stimulation and intrauterine insemination (OR 1.40 CI 0.47–4.15).
Conclusions: There is good evidence that excisional surgery for endometriomata provides for a more favorable outcome than drainage and ablation with regard to the recurrence of the endometrioma, recurrence of pain symptoms, and in women who were previously subfertile, subsequent spontaneous pregnancy. Consequently, this approach should be the favored surgical approach. However, in women who may subsequently undergo fertility treatment, insufficient evidence exists to determine the favored surgical approach.

COMMENTARY

With a vast majority of retrospective studies on the subject, it is the merit of the Cochrane Collaboration to confront us with purely evidence-based information, by continuously searching for and meticulously analyzing the prospective randomized controlled trials (RCT's) that may shed some light on the controversial surgical management of such an enigmatic pathology like the endometriotic cyst, comparing excisional surgery with fenestration, drainage, and ablation/coagulation of its inner lining, both by laparoscopy.
This Cochrane review is actually an update of an earlier publication in 2005, adding one trial to two already analyzed RCT's and including a total number of 245 patients, operated in two centers. The evidence drawn from this comparison suggests that excisional laparoscopic surgery provides significantly better results than draining and destruction of the cyst wall with regard to the recurrence rate, both of the endometriotic cyst itself as of its symptoms, but also with regard to the subsequent chance of a spontaneous pregnancy. However, beside the small numbers, these three RCT's originate from two groups of authors, are not multicentric, and include a potential bias since both patient and surgeon were not blinded as to the type of procedure that was going to be performed.
The advantage of the excision of the endometriotic cyst over the ablative surgery with regard to the disease and symptom-free interval following the procedure probably is true from a purely surgical, even "oncological" point of view. There is however a growing concern in the "retrospective" literature with regard to the functional prognosis (with postoperative adhesions inducing dysfunctional cysts) and the reproductive potential (with a damaged reserve and a significantly altered responsiveness to endo- or exogenous hormonal stimulation, up to premature ovarian failure) of such a stripped ovary in the young fertile or infertile woman. Stripping may directly affect ovarian reserve by removing a consistent amount of what is actually an inverted cortex. The uni- or bipolar electrocoagulation used during hemostasis may also damage the ovarian vascularization. On the other hand, it is true that a more conservative approach with ovariolysis, fenestration, drainage, and a meticulous ablation of the cyst lining has a higher recurrence rate of the chocolate cyst, especially during controlled ovarian hyperstimulation.
Instead of continuously feeding the controversy with pros and cons, we may well be forced to focus on and proactively look for the very small (i.e., early, i.e., young)

stages of the endometriotic cyst, even before it appears on transvaginal sonography (from some millimeters to less than one centimeter in diameter). Transvaginal hydrolaparoscopy offers that possibility, not only enabling us to study and understand its pathology and pathogenesis, but above all, to halt the evolution and growth of the disease in a simpler, more feasible yet fully conservative manner by adhesiolysis, ovariolysis, and coagulation of all the active endometriotic implants, not only on the inside of the cyst, but also on the peritoneal surface of the ovarian fossa and especially on the surface of the ovary itself. From that moment on, the evolution of the disease can be closely monitored with the same technique.

Patrick Puttemans, Leuven

Surgeons may continue to use their chosen entry technique

G, Duffy JM, Phillips K, Watson A.
Laparoscopic entry techniques. Cochrane Database Syst Rev. 2008 Apr 16;(2): CD006583

Objectives: The objective of this study was to compare the different laparoscopic entry techniques in terms of their influence on intraoperative and postoperative complications.
Methods: This review has drawn on the search strategy developed by the Menstrual Disorders and Subfertility Group. In addition, MEDLINE and EMBASE were searched through to July, 2007. Randomized controlled trials were included when one laparoscopic primary-port-entry technique was compared with another. Data were extracted independently by the first two authors. Differences of opinion were registered and resolved by the fourth author. Results for each study were expressed as odds ratio (Peto version) with their 95% confidence intervals.
Results: The 17 included randomized controlled trials concerned 3,040 individuals undergoing laparoscopy. Overall, there was no evidence of advantage using any single technique in terms of preventing major complications. However, there were two advantages with direct-trocar entry when compared with Veress-Needle entry, in terms of avoiding extraperitoneal insufflation (OR 0.06, 95% CI 0.02, 0.23) and failed entry (OR 0.22, 95% CI 0.08, 0.56). There was also an advantage with radially expanding access system (STEP) trocar entry when compared with standard trocar entry, in terms of trocar site bleeding (OR 0.06, 95% CI 0.01, 0.46). Finally, there was an advantage of not lifting the abdominal wall before Veress-Needle insertion when compared to lifting in terms of failed entry without an increase in the complication rate (OR 5.17, 95% CI 2.24, 11.90). However, studies were limited to small numbers, excluding many patients with previous abdominal surgery and women with a raised body mass index, who often had unusually high complication rates.
Conclusions: On the basis of evidence investigated in this review, there appears to be no evidence of benefit in terms of safety of one technique over another. However, the included studies are small and cannot be used to confirm safety of any particular technique.

COMMENTARY

This review illustrates both the well-recognized benefits of conducting careful structured reviews of the world literature and the fallacy of conducting such time-consuming and expensive research on databases that are inherently inadequate for the tasks.
The aim of this review was to determine the relative complication rates associated with various methods of laparoscopic entry. With a very comprehensive trawl of the literature, the authors found a total of 3,040 patients in 17 different randomized trials that investigated ten separate comparisons. The largest number of patients included in any group of studies was 1,909, and the smallest was 62 with most of the other studies being performed on populations of 100–200. Complications related to laparoscopic entry are, however, fortunately very rare, and the number of cases required to demonstrate significant differences in complication rates are correspondingly very large. We previously calculated that to show a difference in bowel injury rate of 50% (i.e., from 0.04% to 0.02%) would require a study population in excess of 800,000. The inadequacy of the size of the various studies analyzed in this review inevitably led to the conclusion that there was no evidence of benefit in terms of safety of any technique. Cochrane Reviews now have a number of full time paid workers and a substantial support infrastructure. This trials review industry has developed a highly sophisticated method for literature review and standardized methods of analysis which can provide great help to clinicians and other health care providers in selecting the most appropriate and effective therapy for many conditions. It is important that these elegant techniques should only be when they stand a reasonable chance of meaningfully informing the readers. The old aphorisms that ‘statistical garbage in equals garbage out’ remains true no matter how sophisticated the subsequent analysis is. It escapes this reviewer why the authors calculated the Peto odds and produced an impressive graph (Analysis 01.01) in which the rate of vascular and visceral injuries were calculated in a study with only 75 patients in each arm. The trouble is that such data and graphs will often be unthinkingly reproduced to support various viewpoints when they are in fact essentially meaningless because the studies are completely underpowered to detect what they are seeking to find.

This paper provides a very useful review of the relevant literature and trials currently available. It also proves that serious injuries do rarely complicated various methods of laparoscopic entry. It gives us no information about the relative safety of each technique. This means that each surgeon may continue to use their chosen entry technique, for there is no evidence to favor any particular technique. The only other valid conclusion from this structured meta-analysis of a mixture of RCTs is that no study so far has been anything near large enough to demonstrate any small but potentially important differences between techniques. The question the authors of this review set out to examine remains unanswered.

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