Authors' objectives
To evaluate the effects of pelvic denervations in addition to conservative surgery on dysmenorrhoea and deep dyspareunia associated with endometriosis.

Searching
Articles published in the English language were sought in MEDLINE (1977 to 1998) and EMBASE (1980 to 1998) using the following MeSH terms: 'endometriosis', 'pelvic pain', 'presacral neurectomy', 'uterosacral ligament resection' and 'surgical therapy'. Handsearches were conducted of the main specialty journals (American Journal of Obstetrics and Gynaecology, British Journal of Obstetrics and Gynaecology, Fertility and Sterility, and Obstetrics and Gynaecology). Additional reports were identified by reviewing all references from retrieved articles and by consulting books and monographs on endometriosis published in the last 10 years. Proceedings of scientific meetings were not included.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs), cohort studies, and observational studies were eligible if results were presented as the proportion of treatment responders and non-responders. Duration of follow-up ranged from 3 to 120 months. Reasons were given for exclusion of identified studies.

Specific interventions included in the review
Conservative surgery was used either alone or in combination with presacral neurectomy, uterosacral ligament resection or with both combined. Laparotomy and laparoscopic surgery were included and surgical modalities included mechanical instrumentation plus electrosurgery, and various forms of laser treatment. Surgical treatments of endometriosis associated pelvic pain were eligible.

The authors also comment on hysterectomy for pelvic pain of different aetiologies.

Participants included in the review
Women with symptomatic endometriosis were eligible. Endometriosis was either not classified or staged according to the revised American Fertility Society classification, the Acosta staging system, or a four level personal scheme (see Other Publications of Related Interest no.1 and no.2).

Outcomes assessed in the review
The primary outcome was response of dysmenorrhoea to treatment, defined as absence or amelioration of pain and non-response defined as persistence, worsening, or recurrence of pain. Pain was evaluated as present or absent, using objective scales (three, four, five or ten point verbal rating scale, seven point multidimensional scale, a ten-point linear analogue scale, or a visual analogue scale) or using no instrument. Secondary outcomes included response of deep dyspareunia to treatment, incidence of intra and postoperative complications, and the type and frequency of side effects. Trials were excluded if it was not possible to categorise the outcome of interest, if the number of symptomatic patients at baseline was not reported, or if interim results were reported in advance of a later full report.

How were decisions on the relevance of primary studies made?
Two authors screened titles and abstracts of all articles.

Assessment of study quality
Some aspects of validity were discussed though no formal validity assessment was undertaken.
Data extraction
Two authors extracted the following data on standardised forms in an unblinded manner: year of publication; type and design of study; treatment modality; main and secondary outcomes; and the number of patients with pain at baseline and at end of follow-up. Discrepancies were identified and resolved by consensus.

For non-comparative studies the rate and 95% confidence interval (CI) of dysmenorrhoea and deep dyspareunia at the end of follow-up were calculated based on a binomial distribution. For each comparative trial, a 2x2 table was generated and odds ratio (OR) and 95% CI calculated.

Methods of synthesis
How were the studies combined?
Where relevant, a combined OR and 95% CI were estimated using the Mantel-Haenszel method (see Other Publications of Related Interest, no.3).

How were differences between studies investigated?
The Breslow-Day method was used to assess statistical heterogeneity and potential causes of clinical heterogeneity were discussed.

Results of the review
Twenty studies in total were included.

Ten studies assessed presacral neurectomy (905 patients) including two RCTs (97 patients), three comparative but non-randomised retrospective studies (196 patients), and five non-comparative studies prospective or retrospective studies (612 patients).

Ten studies (including one RCT, 6 prospective and 3 retrospective studies) were used to assess uterosacral ligament resection (607 patients).

A. Presacral neurectomy.

1. Dysmenorrhoea.

Results were inconsistent.

In the five non-comparative studies, the frequency of dysmenorrhoea recurrence, or persistence after treatment ranged from 4% to 40%. The pooled frequency of non-responders at the end of follow-up was 23% (95% CI: 19%, 27%). Breslow-Day test showed significant heterogeneity (chi-squared = 12.36, df = 4, p = 0.014).

Only two of the three non-randomised trials demonstrated a significant treatment benefit of pre-sacral neurectomy, and the results of the two identified RCTs were discordant. Significant quantitative heterogeneity among studies prevented pooling of data on dysmenorrhoea.

2. Deep dyspareunia (3 studies with 113 patients, including one RCT, on part RCT and one retrospective comparative): there were no statistically significant differences between the intervention and the control group. Pooled OR = 0.69 (95% CI: 0.31, 1.54). Breslow-Day test showed no significant heterogeneity (chi-squared = 0.72, df = 2, p = 0.69).

3. Complications included: urinary tract infection; fever; parotid gland infection; temporary urge incontinence; retroperitoneal bleeding; constipation; urinary urgency; painless first stage of labour; vaginal dryness; and intraoperative bleeding.

B. Uterosacral ligament resection (10 non-comparative arms of studies).

1. Dysmenorrhoea: the frequency varied from 0% to 50% after treatment and, at the end of follow-up was 23% (95% CI: 20%, 27%). The forest plot shows heterogeneity.
2. Deep dyspareunia (4 non-comparative studies: frequency varied from 6% to 42% after treatment, and at the end of follow-up was 13% (95% CI: 8%, 18%). The forest plot suggests heterogeneity.

3. Complications included: haematomas at trochar insertion site; intraoperative bleeding; retroperitoneal fluid extravasation; urinary tract infection; bladder injury; uterine injury; bleeding from operating site; vaginal cuff perforation; vaginal cuff wound diastasis; pelvic pain; urinary retention; nerve injury; and rectovaginal fistula.

Quality of studies.

Methodological problems in the primary studies included: lack of classification of disease stage; lack of evaluation of pain using a valid and reliable instrument; drop-outs and withdrawals were either not clearly identified or not included in the analysis; lack of randomised control group; and lack of description of methods used to assess side-effects.

Sources of clinical heterogeneity included: differences in patient selection; modalities of patient evaluation; and variable follow-up.

Hysterectomy for pelvic pain of different aetiology.

Five studies were described (684 patients) including three prospective and two retrospective observational studies. Percentage obtaining relief or symptomatic improvement ranged from 83% to 97%.

Adhesions and pelvic pain.

Four studies were described including one RCT. The RCT (48 women with pelvic adhesions) reported no significant difference between patients allocated to either adhesiolysis or non-surgical management.

Authors’ conclusions
Routine performance of complementary denervating procedures cannot be recommended on the quality of the evidence available. The results of the five studies on the effect of hysterectomy on chronic pelvic pain of presumed uterine origin consistently demonstrated that 83% to 97% of operated women reported pain relief or improvement one year after surgery. There is no consensus on the outcome of adhesiolysis in patients with chronic pain, the role of pelvic adhesions in causing symptoms is under scrutiny.

CRD commentary
These comments refer to the review on pelvic denervations only.

The primary aim was stated and inclusion criteria defined in terms of study design and intervention. Neither the patient characteristic of endometriosis nor the outcome of pain was defined a priori. Two databases and several relevant journals were searched. Limiting included studies to those in the English language may have omitted some relevant studies and, since no attempt was made to locate unpublished studies, publication bias was possible. Methods used to select studies were not described but reasons were given for exclusion of identified studies. Validity was not formally assessed though some aspects were discussed. Methods used to extract data were described and some relevant information was presented in tabular format. Data were not analysed on an intention to treat basis. Statistical heterogeneity was assessed and results pooled, though given the clinical heterogeneity among studies (including study design) it is debatable whether this was appropriate. Potential causes of heterogeneity were mentioned.

Given the apparently poor quality of the evidence, the authors’ conclusion on the lack of evidence for denervating procedures was supported.

Conclusions on hysterectomy for pelvic pain and adhesiolysis were not the results of systematic review and thus were not supported by the evidence presented.

Implications of the review for practice and research
Practice: The authors state that in presacral neurectomy great care must be taken to avoid damaging major and midsacral vessels and the right ureter; in the absence of robust evidence of a treatment effect, presacral neurectomy should only be performed by expert surgeons in highly selected women who report midline, hypogastric pain without lateral components; it is not possible to exclude that laparoscopic uterosacral ligament resection is of little or no benefit; and routine performance of complementary denervating procedures cannot be recommended based on the quality of the evidence available.

Research: The authors state that an adequately designed comparative study is warranted on the effect of laparoscopic uterosacral ligament resection in addition to lesion ablation on dysmenorrhoea and deep dyspareunia associated with endometriosis; a randomised controlled trial evaluating the efficiency of hysterectomy versus a non-surgical management is required to disentangle the uncertainties as to whether definitive surgery is appropriate for women with chronic pelvic pain; and data are requires to define the role of different adhesion types in the pathogenesis of chronic pelvic pain.

Bibliographic details

PubMedID
10962639

Other publications of related interest

Indexing Status
Subject indexing assigned by NLM

MeSH
Adult; Denervation /methods; Endometriosis /complications /surgery; Female; Genitalia, Female /innervation; Humans; Hysterectomy /methods; Middle Aged; Pelvic Pain /etiology /surgery; Randomized Controlled Trials as Topic; Tissue Adhesions /complications

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Record Status
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.