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Chronic pelvic pain and quality of life after laparoscopy

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Abstract

Objectives: To examine the long-term relationship between chronic pelvic pain (CPP) and quality of life and see if this is affected by a negative laparoscopy result.

Study design: A postal questionnaire survey of CPP and quality of life in 63 women who underwent a diagnostic laparoscopy 12–18 months previously.

Results: Women with CPP still reported pain 12–18 months after laparoscopy and a significantly poorer quality of life than UK norms for women of a similar age. Factor analysis showed that reports of pain symptoms clustered into two dimensions: (1) pain associated with menstruation and (2) pain associated with sexual intercourse and bladder and bowel function. Most dimensions of quality of life were significantly associated with pain. However, ‘role limitation due to emotional problems’ and ‘mental health’ were only associated with pain due to sexual intercourse and bladder and bowel function. Pain and quality of life were not affected by laparoscopy result or follow-up appointment.

Conclusions: Women with CPP continue to have pain and a low quality of life 12–18 months after laparoscopy. Laparoscopy results and follow-up appointments do not appear to affect either pain symptoms or quality of life in the long term, although this may be confounded by women obtaining treatment elsewhere.

Keywords: Pelvic pain; Quality of life; Laparoscopy

Introduction

Chronic pelvic pain (CPP) has been described as one of the most complex problems facing gynaecologists but yet is a common and disabling disorder among women. Pelvic pain has been defined as lower abdominal pain lasting for at least 6 months, which occurs continuously or intermittently and is not associated exclusively with menstruation or intercourse [1]. However this definition is rarely used in clinical practice and longstanding symptoms that cause distress are often deemed sufficient to justify investigation and treatment.

Chronic pelvic pain accounts for 15% of all referrals to a general gynaecologist, 40% of all laparoscopies and it has been estimated that 15–25% of menstrual age women experience chronic pelvic pain [2–4]. CPP is associated with symptoms of depression, anxiety, low quality of life, low productivity, decreased energy, sexual dysfunction and relationship problems [5,6]. Laparoscopy is considered the gold standard for the diagnosis of pelvic pain but in many cases either no pathology is found or the identified pathology may not be responsible for the symptoms described, particularly if minimal or mild endometriosis and pelvic adhesions are recognised. Despite the recognised personal costs of CPP, there is little research on the long-term symptoms and quality of life in women who undergo laparoscopy for pelvic pain, particularly for women where no diagnosis is made.

Those studies that have been carried out indicate that over half of women with CPP still take regular analgesics and report a reduced quality of life up to 2 years after laparoscopy [7]. In addition, a proportion of women will have had a hysterectomy (25%) or further laparoscopy (15%) during this time [8]. However, there is little research focussing on long-term outcome after laparoscopy that uses standardised measures to evaluate quality of life. For example, Doyle et al. [7] measured quality of life with one self-report item.

In summary, research to date has established the impact of CPP upon psychosocial dimensions such as quality of life. However, there is little research describing the long-term symptoms and quality of life in women who undergo laparoscopy for pelvic pain, particularly for women where no diagnosis is made. This study therefore investigated symptoms of pain and quality of life in women 12–18 months after laparoscopy in order to examine the long-term relationship between CPP and quality of life. In addition this study looked at whether there are differences in pain and quality of life between women who had a negative laparoscopy result and women who were given a physical cause for their CPP.

Method

This was a postal questionnaire survey of pelvic pain symptoms and quality of life in 129 women who underwent a diagnostic laparoscopy 12–18 months previously. Inclusion criteria were that women, aged 18 and over, had undergone a laparoscopy within the past 18 months for pelvic pain and in whom either (1) no abnormality was identified or (2) adhesions or mild endometriosis were identified. Ethical approval was obtained from the local NHS research ethics committee and research sponsorship provided by the University of Sussex. The case notes of 236 women who had undergone a laparoscopy between July 2002 and December 2002 were reviewed. This identified 129 women who had laparoscopies primarily for the investigation of pelvic pain and fulfilled the inclusion criteria. The case notes were reviewed and basic demographic and clinical data were abstracted.

A questionnaire was sent to each woman which included (1) the International Pelvic Pain Society's Pelvic Pain Assessment Form (www.pelvicpain.org) which asked about pain over the last month experienced at various times in the menstrual cycle and (2) a validated quality of life questionnaire, Version 2.0 of the Short-Form 36 Health Questionnaire (SF-36-II). The questionnaire was sent with a covering letter explaining about the study, a consent form and a stamped addressed envelope. Women who did not return the questionnaire were sent a second and third questionnaire if necessary.

Seven questionnaires were returned as 'addressee unknown'. Of the remaining 122 questionnaires sent out, 66 were returned giving a response rate of 55%. Three of the returned questionnaires were unidentifiable and unable to be matched to the correct medical record. Therefore, the final sample for this research comprised of 63 women (52% response rate). Of this sample, ages ranged from 18 to 61 (M = 35.9 years, S.D. = 9.37). Thirty percent of women were single and 70% were married or living with a partner.

Statistical analysis

Comparisons of baseline data between responders and non-participants were carried out using Mann–Whitney tests. In women who responded, principle components analysis was used to look at dimensions of pelvic pain. Pearson's product-moment correlations were used to examine the relationship between pain scores and quality of life. T-tests were used to examine differences in pain scores and quality of life between (1) the sample and nationally derived normal ranges, (2) women with a positive or negative laparoscopy result and (3) women with or without a follow-up appointment.

Results

Baseline data abstracted from the case notes

The median age of the 129 women was 31 (range 18–61). Dysmenorrhoea was reported by 62 (48%) and dyspareunia by 64 (50%) women. Indications for laparoscopy were abstracted from case notes so interpretation is limited, as symptoms were variably recorded and often the primary pain was not identified because more than one symptom was present. Broad indications for laparoscopy were therefore (1) low abdominal or pelvic pain (64 women; 50%), (2) primary dysmenorrhoea (51 women; 40%), and (3) secondary dysmenorrhoea (14 women; 10%). Laparoscopic findings were reported as normal in 59 (46%) women, adhesions were present in 26 (20%, although in some cases they were believed to be minor and not responsible for the pain) and minimal or mild endometriosis in 24 (19%) women, A small number of women had other findings such as small ovarian cysts and fibroids that were probably not related to the pain. There were no follow up arrangements for 32 (25%) of the women and a further 61 (47%) were only seen once. In 41 case notes the presence or absence of ongoing symptoms was reported at the follow up visit, which showed symptoms improved in 27 women and were the same or worse in 14 women.

Sample characteristics

Table 1 displays age and gynaecological details for women selected to participate in this research. Women who participated in the study did not differ from non-participants in rates of dysmenorrhoea, dyspareunia, laparoscopy findings, or laparoscopy diagnosis. The sample is therefore broadly representative of all identified women with respect to gynaecological history. However, women who participated were significantly older.

Chronic pelvic pain

Table 2 shows the pelvic pain symptoms women experienced in the previous 4 weeks. It can be seen that pain associated with menstruation is rated as more severe, and pain associated with sexual intercourse is rated as less severe than other dimensions of pain. P analysis of the pain questionnaire identified two factors: pain associated with menstruation (pain before period, after period, with period, or mid-cycle) and pain associated with other factors (pain with intercourse, after intercourse, when bladder is full, or need to open bowels), suggesting women with CPP fall into two categories: pain with menstruation or pain with other activities (Principal Component Analysis, varimax rotation and Kaiser normalisation).

Quality of life

The eight SF-36-II dimensions of quality of life were calculated using algorithms recommended by the developers [9]. For each dimension, corresponding item scores were coded and transformed to a scale where ‘0’ indicates worst possible health state and ‘100’ indicates best possible health state. Table 3 displays the means and standard deviation for each of the quality of life dimensions in this sample compared to normative UK data. It can be seen that women with CPP scored significantly lower on all dimensions of quality of life compared to UK norms (T-tests; t = 10.89–42.19; p = 0.001).

The relationship between pain and quality of life is shown in Table 4 for both dimensions of pain with menstruation and pain with other factors. It can be seen that pain is significantly associated with most dimensions of quality of life. However, role limitation due to emotional problems and mental health are only significantly associated with pain due to other factors (i.e. sexual intercourse and bladder and bowel function).

Do laparoscopy results or clinical follow-up affect pain and quality of life?

Analyses were carried out to examine whether women with a normal laparoscopy result had better recovery than women in whom physical pathology was identified. However, no significant differences in pain or quality of life were found between women who were or were not provided with a physical explanation for their chronic pelvic pain (t = _1.22 to 0.70, n.s.). Similarly, no differences in pain or quality of life were found between women who were given follow-up appointments (70%) and women who were not followed up (30%) (t = _1.29 to 0.44, n.s.).

Discussion

The results of this study are consistent with previous research, including a typical response rate for a postal survey, the high percentage of normal laparoscopies and the finding that women with CPP report continued and sometimes severe pain and reduced quality of life in the long term. This research highlighted that women with CPP tend to fall into two clusters of pain symptoms—those with pain associated with menstruation; and those with pain associated with sex and bladder and bowel function. A second finding of interest is that laparoscopy results and follow-up appointments did not have a significant affect on pain or quality of life in this sample. These findings will be discussed before looking at the methodological limitations of this study and what conclusions can be drawn.

Quality of life and pain symptoms in CPP

Findings support previous research that highlights the impact of CPP upon psychosocial dimensions such as quality of life. For example, Haggerty et al. [5] found that both physical and mental health scores were lower among women with increasing severity of CPP. However, the majority of past research identified was restricted to investigation of this impact in those women suffering from immediate or short-term CPP, with the criteria for the Haggerty study stating 'history of pelvic discomfort for 30 days'. The current research also supports previous findings that recognise the long-term characteristics of CPP, both in terms of pain and quality of life, despite methodological limitations of such findings [8]. It is apparent therefore that 12–18 months following laparoscopy for the investigation of CPP, women are still experiencing negative psychosocial consequences of CPP.

The biggest difference between CPP patients and normative data in the current research was found on levels of bodily pain, suggesting that pain is still the primary problem 12–18 months following consultation for the disorder? In contrast, the smallest difference identified was in levels of physical functioning. This suggests that, despite suffering from substantially more pain, women with CPP do not allow this to interfere with their daily physical functioning, as much as it might with other quality of life dimensions. This study also suggests that themost severe pain following laparoscopy is pain associated with menstruation. However, women with pain associated with other factors reported more mental health problems and role limitations. Subsequently, these different pain symptoms may require different clinical management. However, more research is needed to substantiate these pain sub-syndromes and explore the clinical implications of this further. In addition, it must be recognised that there are a number of other psychological and physical factors that contribute to the maintenance of chronic pelvic and also influence quality of life. Future research should therefore try to examine the contribution of potential mediating or moderating factors, such as anxiety, depression and coexistent physical problems such as interstitial cystitis or irritable bowel syndrome.

Laparoscopy results and follow-up appointments

It is surprising that laparoscopy result and clinical follow up did not affect pain or quality of life in this sample. This is in contrast to a recent study, which suggested that women with normal laparoscopy result had slightly improved quality of life in the medium to long term [10]. There are arguments for and against a diagnosis affecting CPP and quality of life. On the one hand, a physical diagnosis for the cause of CPP may validate women's pain, help them cope with it, and instil hope that there may be a medical or surgical resolution. On the other hand, physical diagnosis may provide a label for the pain that has the converse effect (i.e. makes it more difficult to cope with and remove hope). How women respond to laparoscopy results is therefore likely to be highly individual and varied, which is one explanation for the lack of affect of laparoscopy result on pain and quality of life in this study.

The lack of effect of clinical follow-up is harder to explain. One conclusion that can be drawn is that women who are followed-up are not necessarily those women in the greatest pain or who have the worst quality of life. Therefore other psychosocial or medical criteria are being used to determine whether women should be followed-up clinically or not. It is also possible that prior medical history and treatment affected both clinical follow-up and women's reactions to their laparoscopy results. Previous medical history and treatment were not measured in this study so we are not able to examine this directly. This subsequently limits the conclusions that can be drawn regarding the relationship between treatment (specifically laparoscopy), follow-up, and psychosocial outcome. For example, we cannot exclude the possibility that women went to another hospital or doctor for additional treatment. Future research therefore needs to address this by taking it into consideration.

Methodological limitations

Interpretation of the current findings is limited by the low response rate which means results may not be generalizable to all women with CPP.We have tried to address this through statistical analyses, which showed that participants did not differ in terms of basic gynaecological history to nonparticipants. In addition, the response rate in this study is similar to that of other research that has adopted a similar design. For example, Richter et al carried out a similar longterm follow-up of women with CPP based on a sample of 44 women (a 44% response rate) [8]. Further research should however address limitations associated with response rate, and possibly adopt a modified design that overcomes poor response to postal administration. In addition, a number of potential confounding variables were not measured. For example, it would have been useful to have more information about medical history and treatment prior to diagnosis, as this may well have affected how women responded to the current laparoscopy and results of this. There are also other psychological factors associated with chronic pelvic pain such as anxiety, depression, and physical problems, such as irritable bowel syndrome, which may moderate or mediate the relationship between chronic pelvic pain and quality of life. However, the present study is useful in demonstrating a long-term association between CPP and reduced quality of life following laparoscopy. Further research can now usefully explore the processes underlying this in more depth.

Conclusion

In sum, this study indicates that 12–18 months following laparoscopy for CPP, women are still experiencing significant pain and substantial consequences in terms of low quality of life. Pain and quality of life appear to be irrespective of laparoscopy results or clinical follow-up although this may have been confounded by prior or subsequent treatment at another hospital. Furthermore, it is possible that detailed consideration of the complex relationships between specific pain symptoms and psychosocial correlates would aid the development of more effective intervention and support.

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Table 1. Age and gynaecological details for the total sample

	Responders (N = 63) N (%)	**Non-responders (N = 66) N (%)**	**Significance**
Age group			$p < 0.05$
15–25	10 (16%)	21 (32%)	
26–35	22 (35%)	25 (38%)	
36–45	25 (40%)	16 (24%)	
46–55	4 (6%)	3 (4%)	
56+	2 (3%)	1 (2%)	
Dysmenorrhoea			p = n.s.
None	34 (54%)	28 (42%)	
Primary	20 (32%)	29 (44%)	
Secondary	8 (13%)	5 (8%)	
Dyspareunia			p = n.s.
Yes	33 (52%)	31 (47%)	
No	12 (19%)	11 (17%)	
Laparoscopy findings			p = n.s.
Normal	26 (41%)	33 (50%)	
Adhesions	15 (24%)	11 (17%)	
Mild endometriosis	13 (21%)	11 (17%)	
Severe endometriosis	3 (5%)	3 (4%)	
Multiple findings	5 (8%)	6 (9%)	
Other	1 (2%)	2 (3%)	

a Missing values mean that percentages do not total 100%.

Table 2. Symptoms of pelvic pain

	Median	**Very severe pain**[a] **N (%)**	**Severe pain** **N (%)**	**Some pain** **N (%)**	**Very mild pain** **N (%)**	**No pain** **N (%)**
Before period	3.00	3 (5.3%)	21 (36.8%)	21 (36.8%)	4 (7%)	8 (14%)
With period	4.00	10 (17.9%)	27 (48.2%)	7 (12.5%)	6 (10.7%)	6 (10.7%)
After period	2.50	2 (3.6%)	3 (5.4%)	23 (41.1%)	9 (16.1%)	19 (33.9%)
Mid-cycle	3.00	3 (5.5%)	9 (16.4%)	20 (36.4%)	10 (18.2%)	13 (23.6%)
Deep pain with sexual intercourse	2.00	7 (13%)	10 (18.5%)	9 (16.7%)	16 (29.6%)	12 (22.2%)
Burning pain with sexual intercourse	1.00	6 (11.3%)	3 (5.7%)	4 (7.5%)	5 (9.4%)	35 (66%)
Pain lasting hours after intercourse	1.00	3 (5.5%)	5 (9.1%)	9 (16.4%)	8 (14.5%)	30 (54.5%)
When bladder full	2.00	3 (5.2%)	4 (6.9%)	16 (25.4%)	10 (17.2%)	25 (43.1%)
When need to open bowels	2.00	8 (13.6%)	5 (8.5%)	12 (20.3%)	8 (13.6%)	26 (44.1%)

Note: missing values mean that n ranges from 53 to 59. [a] Pain was rated as 1: no pain; 2: very mild pain; 3: some pain; 4: severe pain; 5: very severe pain.

Table 3. Quality of life in CPP compared to UK norms

SF-36 dimensions	Sample mean (S.D.)	UK norms[a] mean (S.D.)	Significance
Physical functioning	80.67 (24.69)	86.66 (20.15)	p < 0.001
Role-physical	73.10 (29.74)	85.83 (22.52)	p < 0.001
Role-emotional	76.11 (28.72)	84.07 (21.79)	p < 0.001
Social functioning	69.39 (30.63)	81.33 (23.62)	p < 0.001
Mental health	57.76 (22.08)	70.05 (18.65)	p < 0.001
Energy and vitality	43.64 (20.26)	55.91 (19.85)	p < 0.001
Pain	51.07 (22.89)	76.97 (23.44)	p < 0.001
General health perception	56.29 (23.75)	71.28 (20.54)	p < 0.001

a Normative data presented is based upon 4938 women living in the UK (Jenkinson, Stewart-Brown, Petersen and Paice, 1999).

Table 4. Correlations between pain dimensions and quality of life

Quality of life	Pain with menstruation	Pain with other factors
Physical functioning	-.20	-.21
Role limitation due to physical problems	-.31*	-.36*
Role limitation due to emotional problems	-.20	-.51**
Social functioning	-.35*	-.46**
Mental health	-.29	-.33*
Energy and vitality	-.48**	-.32*
General health perception	-.47**	-.37**

* p < 0.05. ** p < 0.01.