Laparoscopic findings in women with chronic pelvic pain

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Objective. This study was undertaken to assess the spectrum of pelvic pathology observed at laparoscopy in women with chronic pelvic pain, and to compare women with an identifiable cause of pain to those with no visible pelvic pathology, with regard to symptomatology and demography.

Design. Retrospective case control study reviewing laparoscopy reports and patient records.

Setting. Department of Obstetrics and Gynaecology, Groote Schuur Hospital.

Patients. One hundred and thirty-six consecutive women undergoing laparoscopic assessment for undiagnosed pelvic pain of at least 6 months' duration, between 1989 and 1991.

Main outcome measures. The presence of endometriosis, pelvic adhesions, other pelvic pathology and 'negative' laparoscopic findings was assessed. The association between pelvic pathology and specific symptomatology, fertility, contraceptive use, past pelvic surgery, ethnic group and smoking is examined.

Results. No cause of pain was identified at laparoscopy in 30% of these patients, while endometriosis was found in 16% of women and pelvic adhesions in 40%. The 41 women with no identifiable laparoscopic abnormality did not differ significantly from the 95 with pelvic abnormalities in respect of age, parity, duration of pain, frequency of dysmenorrhoea and dyspareunia or the presence of gastro-intestinal or urinary symptoms. However, injectable hormonal contraception use was more common in the group with negative laparoscopic findings and smoking was more common among the women with pelvic pathology.

Conclusion. Chronic pelvic pain with a laparoscopically normal pelvis is a common problem in Cape Town, occurring with a frequency similar to that reported from various overseas centres. Women with this problem are not readily identified by demographic profile or symptom complex.

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Chronic pelvic pain (CPP) is a common complaint among women in their reproductive years and may account for as much as one-third of outpatient referrals.[1] Investigation of pelvic pain was the commonest indication for laparoscopic examination (52% of cases) in the 1978 survey conducted by the Royal College of Obstetricians and Gynaecologists,[2] while in the USA, as many as 10 - 12% of hysterectomies are performed for this complaint.[3]

Laparoscopy is now an integral part of the evaluation of women with CPP and it has become clear that a considerable number of these patients have no visible pathology of the pelvis. Whether the pathological features visualised in many of the remaining women cause or contribute to the pain remains uncertain.[4,5]

There is considerable literature on the subject of CPP but, despite this, little progress has been made in our understanding of the condition. The symptoms and signs remain confusing as does the aetiology of pelvic pain in the absence of recognisable pathology at laparoscopy.

Over the past two decades numerous studies of the relative frequency of abnormalities found at laparoscopy in women with CPP have been published. In 30 - 40% of women no abnormality was found, while the most commonly reported pathological findings have been adhesions and endometriosis.[6]

No such figures have been published or are available for the local population of South Africa. This study was undertaken to establish the relative frequency of pelvic pathology in women with CPP presenting to the Gynaecology Outpatients Department at Groote Schuur Hospital, and to examine their demographic profile.

Methods

For the purpose of this study CPP was defined as any pelvic pain of 6 months or longer duration.

The case histories of 136 consecutive patients undergoing laparoscopy for CPP between 1989 and 1991 were examined. All patients had been referred to the Gynaecology Outpatients Department at Groote Schuur Hospital for investigation of undiagnosed CPP.

The patients were distributed between four gynaecological 'firms'. Laparoscopic examinations were performed by experienced clinicians (consultants or supervised registrars). Where pelvic adhesions or endometriosis was reported, the pathology was classified as mild, moderate or severe. Mild adhesions included filmy tubo-ovarian adhesions which did not involve the bowel and did not limit mobility of pelvic organs. Where adhesions were thick, dense and vascular, resulting in fixation of pelvic organs, they were classified as severe; those of intermediate severity were considered moderate.

In the case of endometriosis, a standardised scoring system was not used, and for this reason the assessment of mild, moderate and severe endometriosis was subjective. Mild cases were those patients with only a few endometriotic plaques. Endometriosis causing adhesions with fixation of pelvic organs was regarded as severe and those patients with intermediate findings constituted the moderate cases.

The laparoscopist's report was used to classify each patient according to the major laparoscopic finding. Where no pathological features were identified, the laparoscopy was reported as negative ('normal').

In an attempt to ascertain whether women with an identifiable cause of pelvic pain are different from the group with negative laparoscopy with regard to any of the parameters studied, the two groups were separated and compared. Differences were calculated using the chi-square test and odds ratios (ORs).

Results

In Table I the spectrum of pathology observed is reported. The group of 41 women with negative laparoscopic findings included only those patients with no pathological finding whatsoever.

Table I. Major laparoscopic findings in 136 women with chronic pelvic pain

Negative laparoscopy		41	(30.1%)
Endometriosis		22	(16.2%)
Mild	15		
Moderate	5		
Severe	2		
Adhesions		55	(40.5%)
Mild	18		
Moderate	22		
Severe	15		
Other		18	(13.2%)
Hydrosalpinges	5		
Ovarian cyst	3		
Pelvic congestion	6		
Allen Masters	2		
Fibroid	2		
Total		136	(100%)

Hydrosalpinges were present in more than 5 women but where this condition co-existed with adhesions, the case was included in the group with adhesions as the primary diagnosis. There were only 5 women with isolated hydrosalpinges and no other pathology.

Several demographic parameters were examined. The average age of patients was 31 years, with a range of 20 - 50 years. There was no difference between those with a 'normal' pelvis and those with some identified pathology. Similarly, there was no difference between these two groups in respect of parity, number of miscarriages, marital status, income or ethnic group.

Smoking was, however, more common in the group with positive laparoscopic findings. Seventy-four per cent of women in this group were smokers, compared with 43% in the other (OR = 3.73; 95% confidence interval (CI) 1.45 - 9.72).

Overall 37% of women with CPP had previously had abdominal or pelvic surgery. A greater proportion of women with abnormal findings at laparoscopy had undergone previous surgery compared with the laparoscopically negative group, although this difference did not reach statistical significance (OR = 1.98; CI 0.83 - 4.79).

Various aspects of fertility and contraception were compared. Infertility was a feature in 22.4% of women; considerably more women in the laparoscopy-positive group complained of this problem ($P = 0.06$, OR 3.24; 95% CI 0.96 - 12.06). The use of injectable contraception in the group with negative laparoscopic findings was significantly greater than in the group with pelvic pathology ($P < 0.005$, OR 0.16; CI 0.04 - 0.58).

Aspects of symptomatology were compared (Table II), with both groups demonstrating a very similar spectrum of pathology.

Table II. Symptomatology of chronic pelvic pain

	Total group ($N = 136$)	Laparoscopy negative (30.1%) ($N = 41$)	Laparoscopy positive (69.9%) ($N = 95$)	P-values
Duration of pain (mths)	23.2 ± 27.1	25.9 ± 28.9	21.8 ± 26.3	NS
Dysmenorrhoea	74.0%	64.1%	78.2%	NS
Dyspareunia	65.3%	58.9%	68.0%	NS
Constipation	23.1%	22.5%	23.1%	NS
Dysuria	22.7%	21.9%	23.1%	NS
Frequency	19.0%	30.0%	14.2%	0.06

The average white cell count and the erythrocyte sedimentation rate were normal in both groups, indicating that these tests are not useful in detecting pelvic abnormalities in the setting of chronic pain.

Discussion

The prevalence of a laparoscopically normal pelvis in the presence of CPP is high in our population, with 30% of women having no abnormality whatsoever. Steege *et al.*[6] reviewed 15 similar studies performed between 1972 and 1991 and showed the prevalence of laparoscopy-negative CPP to be in the region of 36%.

The prevalence of endometriosis in Cape Town is similar to that in the centres reviewed by Steege *et al.*: 16.2% compared to 17%. Adhesions seem to be considerably more common in our community: 40.5% compared with 20%, possibly as a consequence of our high incidence of pelvic infections or the inadequate treatment thereof.

The cause of pain in women with CPP in the presence of negative laparoscopic findings has long been a subject of controversy. Dilation of the pelvic veins, or 'pelvic venous congestion' has recently been investigated as a possible explanation for the pain. Beard *et al.*[7] used pelvic venography to demonstrate markedly dilated veins in many of these women. They postulate that pain is caused by venous dilation with stasis in the veins of the infundibulopelvic and broad ligaments. Because they are thin-walled with deficient valves and poorly supported by connective tissue, these vessels are prone to dilation. Hormonal factors appear to be involved in the pathogenesis of venodilation. Ovarian oestrogen production has been implicated; that many sufferers are relatively hyperoestrogenic with abnormal polycystic ovaries is evidence of this, and the venodilation is more marked on the side of the developing follicle, while ovarian suppression with high doses of progestogens has improved symptoms and reduced venous diameter. Mechanical factors, such as prolonged standing or sitting and uterine retroversion, may aggravate the tendency to venous stasis.

It has also become clear that there are measurable psychological differences between the group of women with CPP and controls, with a higher incidence of somatisation behaviour in the pain group. Serious sexual abuse in childhood is significantly more common among women with CPP. Harrop-Griffiths *et al.*[8] found that 64% of women with CPP (irrespective of the presence or absence of pelvic pathology) had suffered childhood sexual abuse, compared with 23% of pain-free controls.

Contrary to our initial expectations, a large proportion of women with CPP in Cape Town have no cause identifiable by laparoscopy. Many of these women may be suffering from pelvic venous congestion and further study of this group is indicated. A history of sexual or physical abuse and ultrasonographic evidence of dilated veins with polycystic ovaries are important indications of this syndrome.

The mean age of 31 years in our study group with a range of 21 - 50 years reconfirms that CPP is a condition peculiar to women in their reproductive years and suggests that ovarian hormones may be involved in the pathogenesis.

The duration of pain was similar in both groups, with associated dysmenorrhoea and dyspareunia occurring with similar frequency in both groups. About one-fifth of patients complained of constipation but this was not useful in predicting laparoscopic findings. On the other hand, urinary frequency was more common in women with no visible pathology, perhaps indicative of interstitial cystitis or urethral syndrome in a proportion of these women. Reiter[9] and Gambone and Reiter[10] on close examination of women with laparoscopy-negative pelvic pain found that 11% had one of these urological entities.

A very high incidence of smoking was recorded, particularly in the group with pathological findings at laparoscopy (74.4%). The association of smoking with CPP would appear not to be causative as there are fewer smokers in the group with negative laparoscopic findings. It may represent an association with a particular personality type or be the result of particular life stresses; alternatively smoking may be a response to chronic pain.

This study shows that it is not possible to predict, on the basis of symptoms and demographic profile, which women with CPP will have pelvic pathology at laparoscopy. Women with a 'normal' pelvis generally have the same symptoms and background as those with pelvic adhesions and endometriosis, suggesting that the pathogenesis of pain in both groups may be similar and that in certain women the presence of an abnormality may be purely incidental and that to label it as causative may hinder appropriate treatment.

The team approach of the pelvic pain clinic, with staff sensitive to both gynaecological and psychological aspects of CPP, is most likely to produce effective relief from this distressing symptom.

In just such a clinic, Gambone and Reiter[10] on extensive evaluation of 200 women with laparoscopy-negative CPP, found that 50% had pain of psychogenic origin, 25% had non-gynaecological somatic pathology and 20% had

gynaecological pathology that had been missed, leaving only 10% with no aetiological factor identified. Symptomatic relief was obtained in 75% of these women.

REFERENCES

1. Morris N, O'Neill D. Outpatient gynaecology. *BMJ* 1958; **1:** 1038-1039.
2. Chamberlain GVP, Brown JC, eds. Report of the Working Party of the Confidential Enquiry into Gynaecological Laparoscopy. London: Royal College of Obstetricians and Gynaecologists, 1978.
3. Dicker RC, Greenspan SR, Strauss LT, *et al*. Complications of abdominal and vaginal hysterectomy among women of reproductive age in the United States. *Am J Obstet Gynecol* 1982; **144:** 841-848.
4. Kresch AJ, Seifer DB, Sachs LB, Barrese I. Laparoscopy in 100 women with chronic pelvic pain. *Obstet Gynecol* 1984; **64:** 672-674.
5. Cunanan RG, Courey NG, Lippes S. Laparoscopy findings in patients with pelvic pain. *Am J Obstet Gynecol* 1983; **146:** 589-591.
6. Steege JF, Stout AL, Somkuti SG. Chronic pelvic pain in women: Toward an integrative model. *Obstet Gynecol Surv* 1993; **48:** 95-110.
7. Beard RW, Highman JH, Pearce S, Reginald PW. Diagnosis of pelvic varicosities in women with chronic pelvic pain. *Lancet* 1984; **2:** 946-949.
8. Harrop-Griffiths J, Katon W, Walker E, Holm L, Russo J, Hickok L. The association between chronic pelvic pain, psychiatric diagnoses, and childhood sexual abuse. *Obstet Gynecol* 1988; **71:** 589-594.
9. Reiter RC. Occult somatic pathology in women with chronic pelvic pain. *Clin Obstet Gynecol* 1990; **33:** 154-160.
10. Gambone JC, Reiter RC. Non-surgical management of chronic pelvic pain. A multidisciplinary approach. *Clin Obstet Gynecol* 1990; **33:** 205-211.

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