



Original Article

The clinical profile of young and adolescent women with laparoscopically diagnosed endometriosis in a Singapore tertiary hospital



Yoke-Fai Fong, Soon-Kit Hon, Li-Lian Low, Karen Lim Mei Xian*

Department of Obstetrics and Gynaecology, National University Hospital Singapore, Singapore

ARTICLE INFO

Article history:

Accepted 7 July 2016

Keywords:

Endometriosis

Adolescent

Asian

ABSTRACT

Objective: Endometriosis has been increasingly recognized as the cause of severe dysmenorrhea among younger women including adolescents, often with significant delay from time of presentation to diagnosis. Data on the South East Asian women is scarce. This study aims to describe the disease pattern in a group of young Asian women with histological diagnosis of endometriosis in our center.

Materials and Methods: A total of 709 laparoscopic operations were performed for endometriosis in our center between 2000 and 2007. Women aged 25 years old and below were included in this study. Details regarding clinical presentation and severity of disease were retrospectively reviewed and described.

Results: A total of 45 women were included in this study, aged between 14 years and 25 years. Thirty seven patients (82.3%) were aged between 21 years and 25 years. Racial distribution was as follows: 57.8% Chinese, 26.7% Malay, and 15.6% Indian. Dysmenorrhea was the commonest symptom (84.4%); 44.4% of which were described as mild. Eleven patients (24.4%) presented with severe symptoms resulting in absence from school or work. Severity of endometriosis during laparoscopy was staged using the rAFS staging system, and was 11.1%, 17.8%, 28.9%, and 42.2% for disease Stage I, Stage II, Stage III, and Stage IV, respectively.

Conclusion: Endometriosis can cause severe disease even in adolescents and young females. Increased awareness among patients and healthcare providers would raise a higher index of suspicion for endometriosis in these women, with consequent early treatment which may result in better functional and fertility outcomes.

© 2017 Taiwan Association of Obstetrics & Gynecology. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Endometriosis has been increasingly recognized to be the cause of chronic pelvic pain among younger women including adolescents [1], with a reported incidence of 62% among adolescents undergoing laparoscopic investigation [2].

However, despite data showing that a significant proportion of women with endometriosis present in the adolescent years, diagnosis is often delayed, with implications on future fertility. This diagnostic challenge can be attributed to the difference in clinical presentations in this group compared with the adult population. Symptoms commonly described by the adult population are

cyclical dysmenorrhea, deep dyspareunia, or subfertility. By contrast, the adolescent patient often presents with pain complaints which may be both cyclical and acyclical [3], and may present with other symptoms such as dyschezia, dysuria, urgency, and hematuria [4–6].

Another possible factor for delayed diagnosis in these young women is the cultural reluctance to visit a gynecologist at a young age, particularly in Asian culture [7]. Dysmenorrhea is a commonly reported symptom (up to 69.4%) among Asian adolescents [8], but data on the prevalence, presentation, and clinical management of endometriosis in adolescents and young women in our local population is scarce. The early recognition and timely diagnosis of endometriosis in the younger and adolescent population is dependent on the awareness of the condition among the women themselves, parents, nurses, general practitioners, and gynecologists. This study aims to describe our experience with endometriosis in young Singaporean women aged 25 and below in our center,

* Corresponding author. Department of Obstetrics and Gynecology, National University of Singapore, Yong Loo Lin School of Medicine, 1E Kent Ridge Road, National University Hospital S Tower Block, Level 12 119228, Singapore.

E-mail address: karen.lim@mohh.com.sg (K. Lim Mei Xian).

so as to aid in early recognition of the disease, with hope to improve care in the management endometriosis in this population.

Materials and methods

Electronic operative details for all laparoscopic operations performed between 2000 and 2007 under the Obstetrics and Gynecology Department in National University Hospital were reviewed. The inclusion criteria of this study were patients who had laparoscopy for suspected endometriosis, with histological confirmation of endometriosis, and aged 25 years and below. Clinical details such as presentation, investigation, surgical findings, and follow up of these women were obtained from electronic and paper hospital records and entered into in a standard proforma. Data was anonymized using serial numbers. The data was analyzed using SPSS 13.0 (SPSS Inc., Chicago). Ethics approval was obtained from the DSRB ethics approval board, reference number D07392, considered under the exempt category.

Results

A total of 709 patients had laparoscopy performed for the indication of suspected endometriosis, based on symptoms of dysmenorrhea or chronic pelvic pain, or for investigation of subfertility. Of these patients, 45 were aged 25 years old and below and were included in this study. The youngest patient in this study was 14 years old. Eight patients (17.7%) were aged 20 years and below, and 37 patients (82.3%) were between 21 years of age and 25 years of age. Racial distribution was as follows: 26 patients were Chinese (57.8%), 12 patients were Malay (26.7%), and 7 patients were Indian (15.6%). Some 44.4% of these patients were virgo intacta.

Presenting symptoms

Presenting symptoms of patients are described in Table 1. Two patients presented with incidental findings of ovarian cysts during investigation for subfertility, but were otherwise asymptomatic.

In this study, functional disability was defined as either the inability of the patient to perform her daily tasks with/without absence from school/work. Thirty patients (66.7%) reported no significant functional disability, while 11 patients (24.4%) reported functional disabilities, with absence from school and work being the commonest. Four patients (8.9%) presented with subfertility, one of which was a case of secondary subfertility.

Three patients (7.7%) were diagnosed with endometriotic cysts intraoperatively when diagnostic laparoscopies were performed for the indications of suspected ovarian accident in one case and acute appendicitis in the other two cases. These patients had minimal symptoms suggestive of endometriosis prior to presentation.

Adolescent patients tended to present with a shorter duration of symptoms compared with patients between 21 years of age and 25 years of age. Symptoms ranged from 1 week to 3 months prior to surgery in the group aged 20 years old and below. In contrast, the

duration of symptoms prior to operation ranged from 1 week to 4 years in the group aged 21–25 years age. Of these, five patients had symptom duration of 2 years or more.

Physical examination was frequently unremarkable, with positive clinical findings of an abdominal mass present in only two patients (8%).

Investigations

A preoperative ultrasound was performed in all but three patients. Of the 42 patients who had an ultrasound performed pre-operatively, one patient had normal findings. Among the 41 patients with positive ultrasound findings suggestive of endometriosis, 18 had bilateral ovarian cysts and 23 patients had unilateral ovarian cysts. Ultrasound characteristics of these cysts were low echo in 29 patients (69%), complex in five patients (11.9%), unilocular in four patients (9.5%), and described as cystic spaces in three patients (7.1%).

Ca 125 levels were available in 25 patients and were elevated (>35.0 IU/mL) in 15 patients (60%). Mean Ca 125 level was 104.1 IU/mL (range: 14–839.5 IU/mL).

Medical management

A total of 30 patients received medical treatment prior to laparoscopy, which was comprised of nonsteroidal antiinflammatory drugs in 16 patients (35.6%), combined oral contraceptive pill in 9 patients (20%), progestogens in 3 patients (6.7%), and a combination of either regimen in 2 patients (4.4%). Table 2 describes the mode of management the women received prior to laparoscopy.

Surgical treatment

In the majority of cases, surgery was performed laparoscopically, except in five patients (11.1%), who eventually required a laparotomy due to the large cyst size. Thirty-six patients (80.0%) had laparoscopic cystectomy and four patients (8.9%) had laparoscopic ablation of endometriotic deposits. The severity of endometriosis was staged according to the Revised American Society for Reproductive Medicine classification of endometriosis [9]. Five patients (11.1%) had Stage I disease, 8 patients (17.8%) had Stage II disease, 19 patients (42.2%) had Stage III disease, and 13 patients (28.9%) had Stage IV disease.

Postoperatively, 11 patients were put on the combined oral contraceptive pill (24.4%) and two patients on progestogens (4.4%).

The follow up period ranged from 1 week to 4 years. Eight patients (17.8%) defaulted follow up.

Discussion

Despite the substantial existing literature available on the diagnosis and management of endometriosis in adolescents, information on the condition in young Asian women remains sparse. A review of 32 Korean adolescents with laparoscopically confirmed

Table 1
Presenting symptoms.

Presenting Symptom	No. of patients (%)
Dysmenorrhea	
• Mild	20 (44.5)
• Severe	18 (40)
Noncyclical pain	2 (4.4)
Menstrual irregularities	
• Menorrhagia	2 (4.4)
• Oligomenorrhea	1 (2.3)
Ovarian cysts	2 (4.4)

Table 2
Treatment received prior to laparoscopy.

Treatment type	No. of patients (%)
Nil	15 (33.3)
NSAID	16 (35.6)
OCP	9 (20.0)
Progestogens	3 (6.7)
Combination	2 (4.4)

OCP = oral contraceptive pill; NSAID = nonsteroidal antiinflammatory drugs.

endometriosis highlighted the differences between the Asian and Western culture as a contributory factor in the reluctance to seek a gynecological opinion for the issue of dysmenorrhea at a young age, leading to a delayed diagnosis of the condition in these women [7]. Similarly, reasons for the delayed presentation and eventual diagnosis of endometriosis in young Singaporean women could be due to a similar culture, where young unmarried women do not often present to a gynecologist for issues with menstruation. Instead, there is often an acceptance of painful menses as “normal”, a lack of clinical suspicion by the general practitioner who the young adolescent presents to, or limited ability to perform an adequate pelvic examination in the young patient either due to their virgo intacta status or a reluctance on the part of the primary physician.

A significant proportion of patients (33.3%) were not treated prior to surgery. In these cases, ultrasound findings of an ovarian cyst prompted urgent surgical intervention without a trial of medical management. Ultrasound detects focal endometrial implants poorly but detects endometriomas with 83% sensitivity and 98% specificity [10]. Despite positive ultrasound findings in almost all patients who had an ultrasound performed prior to surgery in this study (97.6%), only two patients had positive clinical findings of an abdominal mass. Additionally, 44.4% of patients in our series were virgo intacta, hence, pelvic examination and ultrasound was not performed. With these significant limitations on the usefulness of physical examination in these women, ultrasound becomes an important investigation and should be routinely done in the adolescent presenting with dysmenorrhea.

This study also found that the majority of our patients (71.1%) had Stage III or Stage IV disease at the time of laparoscopy. This result is contrasted with that found by Dun et al [11], in which the majority of adolescents had Stage I disease (68%) and none had Stage IV disease. Severity of disease reported by Bai et al [7] was 10%, 44%, 28%, and 18% for Stage I, Stage II, Stage III, and Stage IV disease, respectively. Severity of disease reported by Ragab et al [12] in 27 adolescent patients who underwent laparoscopy for sonographically suspected endometriosis was 12%, 7%, 8%, and 0%, respectively. The larger proportion of patients with Stage IV disease in our study compared with others could be attributable to our patient population. In this study, 82.3% of our women were aged between 21 years and 25 years, compared with the other cited studies which looked at adolescents aged 21 years and younger. This could account for the difference in results, further supporting the evidence that a delay in diagnosis results in worsening of disease extent. It is also of note that almost all patients in these had ovarian endometrioma, which is known to be a marker of more extensive peritoneal and intestinal disease [13]. Additionally, the retrospective nature of this study could introduce a selection bias, as it is possible that only women with severe enough symptoms were counseled for surgery, and hence had a higher proportion of severe disease found at the time of laparoscopy. However, it is important to note that the study by Dun et al [11] was of similar design, with differing results.

In our study, a large percentage of our population (71.2%) was not put on hormonal suppression following surgery. Besides a cultural reluctance of the young women to be on the contraceptive pill due to parental “objection”, evidence pointing towards a clear benefit for postsurgery medical treatment was not strong during the time period in which this study was performed. However, since the late 2000s, there has been more evidence for use of long term combined oral contraception after conservative surgery for endometriosis to reduce anatomical relapse and symptom recurrence [14]. It is now routine practice in our institution to start patients on suppressive hormonal therapy after surgery.

Even though this was a retrospective study, our results contribute to the limited literature on the topic of endometriosis in young Asian women. It highlights the uniqueness of the management of the condition in an Asian population owing to cultural differences in health-seeking behavior in these women, with potentially significant delay in diagnosis and management, resulting in more severe disease. Room exists for further studies exploring the relationship of cultural differences between an Asian and Western population in the role of severity of disease in these women, looking specifically at the adolescent population. The use of questionnaires and surveys to assess young women's perceptions and understanding of endometriosis and its management options would help to guide us in the efforts to promote awareness among both patients and healthcare providers about the importance of the timely diagnosis of the condition.

Conclusion

Endometriosis in the adolescent is a known entity with potentially deleterious long term consequences if not diagnosed early. An earlier discussion with the young patient who presents with worsening dysmenorrhea regarding laparoscopic investigation certainly has merit, even in the absence of positive ultrasound findings. Earlier treatment may prevent damage to the ovaries and adjacent structures, reduce the incidence of adhesions, and thus lessen the impact on fertility.

Conflicts of interest

The authors have no conflicts of interest relevant to this article.

References

- [1] Ballweg ML. Treating endometriosis in adolescents: does it matter? *J Pediatr Adolesc Gynecol* 2011;24(5 Suppl): p. S2–6.
- [2] Janssen EB, Rijkers AC, Hoppenbrouwers K, Meuleman C, D'Hooghe TM. Prevalence of endometriosis diagnosed by laparoscopy in adolescents with dysmenorrhea or chronic pelvic pain: a systematic review. *Hum Reprod Update* 2013;19:570–82.
- [3] Laufer MR, Goitein L, Bush M, Cramer DW, Emans SJ. Prevalence of endometriosis in adolescent girls with chronic pelvic pain not responding to conventional therapy. *J Pediatr Adolesc Gynecol* 1997;10:199–202.
- [4] Greene R, Stratton P, Cleary SD, Ballweg ML, Sinai N. Diagnostic experience among 4334 women reporting surgically diagnosed endometriosis. *Fertil Steril* 2009;91:32–9.
- [5] Goldstein DP, De Chonoky C, Emans SJ. Adolescent endometriosis. *J Adolesc Health Care* 1980;1:37–41.
- [6] Laufer MR, Sanfilippo J, Rose G. Adolescent endometriosis: diagnosis and treatment approaches. *J Pediatr Adolesc Gynecol* 2003;16(3 Suppl): S3–11.
- [7] Bai SW, Cho HJ, Kim JY, Jeong KA, Kim SK, Cho DJ, et al. Endometriosis in an adolescent population: the severance hospital in Korean experience. *Yonsei Med J* 2002;43:48–52.
- [8] Lee LK, Chen PC, Lee KK, Kaur J. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Med J* 2006;47: 869–74.
- [9] Revised American Society for Reproductive Medicine classification of endometriosis: 1996. *Fertil Steril* 1997;67:817–21.
- [10] Umari N, Olliff JF. Imaging features of pelvic endometriosis. *Br J Radiol* 2001;74:556–62.
- [11] Dun EC, Kho KA, Morozov VV, Kearney S, Zurawin JL, Nezhat CH. Endometriosis in adolescents. *JLS* 2015;19.
- [12] Ragab A, Shams M, Badawy A, Alsammani MA. Prevalence of endometriosis among adolescent school girls with severe dysmenorrhea: A cross sectional prospective study. *Int J Health Sci (Qassim)* 2015;9:273–81.
- [13] Redwine DB. Ovarian endometriosis: a marker for more extensive pelvic and intestinal disease. *Fertil Steril* 1999;72:310–5.
- [14] Seracchioli R, Mabrouk M, Manuzzi L, Vicenzi C, Frasca C, Elmakky A, et al. Post-operative use of oral contraceptive pills for prevention of anatomical relapse or symptom-recurrence after conservative surgery for endometriosis. *Hum Reprod* 2009;24:2729–35.