Adenomyosis at Hysterectomy: Prevalence, Patient Characteristics, Clinical Profile and Histopathological Findings

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INTRODUCTION

Adenomyosis, a common non-malignant condition of the uterus, is characterized by the presence of endometrial glands as well as stromal elements situated at least 2.5mm below the endomyometrial junction. Name Adenomyosis Synonyms “endometriosis interna”, “uterine endometriosis”, “internal endometriosis”. The minimum distance necessary for diagnosis has been debated, but ranges from 2 mm to more than 4 mm, or from one to two low-power fields.1 None of these definitions has been accepted universally.

Though the general incidence of adenomyosis has not been accurately determined, in hysterectomy specimens the incidence of adenomyosis reported in the literature varies, ranging from 5% to 70%.2-7 Usually adenomyosis is diagnosed mainly after hysterectomy pathologically although MRI is becoming more common. Despite its frequency, rare epidemiological studies on adenomyosis have been done and only little epidemiological profile of women at risk is known.

Adenomyosis induces hyperplasia and hypertrophy of
the myometrium, thus enlarging the uterus. Clinical observation suggested that it may be related to abnormal uterine bleeding and chronic pelvic pain, although adenomyosis is often asymptomatic.8-10 When present, these symptoms lead to a presumptive preoperative diagnosis of adenomyosis and are often indication of hysterectomy.

Since the uterus is a hormonally responsive organ, hormones (oral contraceptive pills, progesterone pills, gonadotrophin hormones, progesterone intrauterine device) are the mainstay of medical treatment of symptoms. These drug decrease uterine symptoms of adenomyosis, but it return quickly after the medicine wears off.11,12 Hysteroscopic endometrial ablation is good for heavy bleeding per vagina rather than menstrual cramps is if main symptoms of adenomyosis.13 However, complete eradication of deep adenomyosis is problematic and is responsible for treatment failure. Uterine artery embolization has also been used to relieve symptoms for some women, although success rates vary widely.14 Thus the purpose of this study is to evaluate the clinical profile associated with adenomyosis and to determine the prevalence of adenomyosis in hysterectomy specimens; frequency distribution, as well as to correlate clinical examination with histopathological examination.

METHODS

A hospital based cross-sectional study was carried out at Chitwan medical college teaching hospital from 1st April 2009 to 31st March 2010. Women who had undergone abdominal, vaginal or laparoscopic hysterectomy with or without salpingo- oophorectomy and with histopathologically proven adenomyosis alone or with other pathological condition were included in this study. A retrospective medical record review of hospital and ambulatory records was performed. Data were collected on indication for the intervention, age at surgery, symptoms, clinical findings, pre-op hemoglobin, menopausal status as well as gross and histopathological findings. Each pathologic specimen included the uterus with cervix. Measurements of uterus including length (l), breadth (b) and thickness (t) were noted in cm and size of uterus was calculated in cm3 (volume= lxbxt) and stratified in three groups : <150 cm3, 150-400cm3, 401-650 cm3. Other histopathological variables were also noted, such as endometrial status, and cervical findings. Adenomyosis was diagnosed when the distance between the lower border of the endometrium and the affected myometrial area was over one-half of a low power field (i.e. 2.5mm).

The data were analyzed with Epi- Info and SPSS software. Quantitative variables were summarized by means and SD variables, following non-normal distribution by median and range. Categorical variables were summarized by frequencies (%). One way Anova test was applied to compare the mean hemoglobin level (gm %) and mean duration of symptoms (years) with the size of uterus. Prevalence menorrhagia, dysmenorrhoea and chronic pelvic pain in women with various ranges of size of uterus was compared using Kruskal- Wallis H test. In all statistical analysis, p<0.05 was considered statistically significant.

RESULTS

A total of 256 women were scheduled for hysterectomy. Out of which 201(78.5%) were for total abdominal hysterectomy and laparoscopic assisted vaginal hysterectomy and 55 (21.4%) for vaginal hysterectomy. Adenomyosis was diagnosed in 60 of 256 cases (23.4%).

Indication of hysterectomy were divided into following categories as shown in table 1 which also show frequency distribution of adenomyosis.

Table 2. Clinical symptoms of adenomyosis.

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>n</th>
<th>n (%)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal heavy uterine bleeding</td>
<td>60</td>
<td>27</td>
<td>81.6-97.2</td>
</tr>
<tr>
<td>Fibroid</td>
<td>61</td>
<td>10(16.3%)</td>
<td></td>
</tr>
<tr>
<td>Prolapse</td>
<td>55</td>
<td>11(20%)</td>
<td></td>
</tr>
<tr>
<td>Ovarian tumor</td>
<td>35</td>
<td>4(11.4%)</td>
<td></td>
</tr>
<tr>
<td>Chronic pelvic pain</td>
<td>25</td>
<td>5(20%)</td>
<td></td>
</tr>
<tr>
<td>Endometriosis</td>
<td>4</td>
<td>3(75%)</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td>16</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Thirty eight (63.3%) women gave history of regular menstrual cycle and the rest 22(36.7%) gave irregular. Ten patients were in menopause state and nine (90%) among them also gave past history of menorrhagia and seven (70%) had dysmenorrhoa and chronic pelvic pain.

Per vaginal examination findings were elaborated on table 3, where maximum (46.7%) had bulky uterus. Women
having more than 10 weeks size uterus was associated with fibroid.

Table 3. Clinical examination of patient of adenomyosis.

<table>
<thead>
<tr>
<th>Size of uterus</th>
<th>N (%)</th>
<th>95%CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>12 (20%)</td>
<td>10.8-32.3</td>
</tr>
<tr>
<td>Bulky</td>
<td>28 (46.7%)</td>
<td>33.7-60</td>
</tr>
<tr>
<td>6 Weeks</td>
<td>3 (5%)</td>
<td>1.0-13.9</td>
</tr>
<tr>
<td>8 Weeks</td>
<td>10 (16.7%)</td>
<td>8.3-28.5</td>
</tr>
<tr>
<td>10 Weeks</td>
<td>4 (6.7%)</td>
<td>1.8-16.2</td>
</tr>
<tr>
<td>&gt; 10 Weeks</td>
<td>3 (5%)</td>
<td>1.0-13.9</td>
</tr>
<tr>
<td>TOTAL</td>
<td>60 (100%)</td>
<td></td>
</tr>
</tbody>
</table>

On per vaginal examination, only in 26(52%) cases uterine tenderness was present. The median volume of uterus is 121 cm³ (range: 14 cm³-650cm³). Table 4 shows the comparison of mean hemoglobin level and mean duration of symptoms in years with the size of the uterus with adenomyosis.

Table 4. Comparison of size of uterus with Hb level and duration of symptoms.

<table>
<thead>
<tr>
<th>Size of uterus (cm³)</th>
<th>Mean Hb (gm %)</th>
<th>Mean duration of symptoms(years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;150 (n=33)</td>
<td>10.6± 1.4</td>
<td>3.8 ±2.2</td>
</tr>
<tr>
<td>150-400(n=21)</td>
<td>10.18± 1.27</td>
<td>3.52± 2.4</td>
</tr>
<tr>
<td>401-650(n=3)</td>
<td>9.5± 0.8</td>
<td>5±0.0</td>
</tr>
<tr>
<td>F=1.36</td>
<td>F=0.552</td>
<td>P=0.26</td>
</tr>
<tr>
<td>P=0.26</td>
<td>P=0.57</td>
<td></td>
</tr>
</tbody>
</table>

There was no significant difference between the median volume of uterus with and without dysmenorrhoea 129 cm³ (range 14-650) and 90 cm³ (range 21-319), respectively (p=0.483). The median volume of uterus was not significantly differ from the presence or absence of chronic pelvic pain i.e. 121cm³ (range 14-650) and 108cm³(32-205), respectively (p=0.687). Similarly, there was no significant difference between the median volume of uterus with and without heavy uterine bleeding 123 cm³ (14- 650) and 90 cm³ (21-162), respectively (p=0.4048). Types of endometrium in hysterectomized patient were enumerated in bar diagram, which shows that proliferative type of endometrium is maximum(41.7%).

Histopathological examination of cervix showed: chronic cervicitis in 38 (63.3%), chronic cervicitis with metaplasia in13 (21.7%), carcinoma intraepithelial neoplasia in nine (15%) cases.

DISCUSSION

As the population studied were women who had undergone hysterectomy, potential bias should be considered. Thus, these results should only refer to this group of women with adenomyosis, and cannot be generalized to all women with adenomyosis. The pathologist in this study was not aware of the study goal, and if anything, under diagnosis of the disease should tend to reduce a potential association. In this study adenomyosis was diagnosed when the distance between the lower border of the endometrium and the affected myometrial area was over one - half of a low- power field (2.5mm) which was currently accepted definition. Our data demonstrates that adenomyosis is a common finding present in almost one- forth (23.4%) of hysterectomy specimens of middle aged women. The reported frequency in literature is 5-70%. It was rarely diagnosed correctly preoperatively and still largely under-diagnosed as it has no special symptoms of its own. In our study also only in 23.3% cases adenomyosis was clinically suspected.

Menorrhagia, chronic pelvic pain and dysmenorrhoea are thought to be suggestive of and attributable to the presence of adenomyosis in clinical observation. In our study also these three symptoms were most frequently related with adenomyosis. Parazzini F, et al also reported that women with adenomyosis had more dysmenorrhoea and chronic pelvic pain but not dyspareunia. Symptoms of heavy /abnormal bleeding are thought to be positively associated with the depth of penetration of adenomyosis into myometrium. However we were not able to assess the depth of penetration, so there is the possibility that association with vaginal bleeding may be masked in our study. In the studies of chronic pelvic pain in which women had hysterectomies, the incidence of adenomyosis is 15-25%. Consistent findings have been seen in our study also i.e. 20%.

Molitor JJ have suggested that the frequency of the condition increases with age until menopause and level off thereafter. Multiparity has been associated with an increase frequency of adenomyosis. Natural history of symptoms usually goes away after menopause. The mean age and parity in our study agrees with the literature.

Table 4 shows that bigger the size of uterus with
adenomyosis, lesser is hemoglobin level due to heavy uterine bleeding. Similarly more the duration of symptoms persist, bigger the size of uterus is seen. But both of these values are not statistically significant.

Bergholt T et al showed significant association with adenomyosis and endometrial hyperplasia. The results substantiate previously published findings of a relationship between high concentration of estrogen and adenomyosis and the elevated estrogen concentration in the menstrual blood of women with adenomyosis. However we could not find similar association between adenomyosis and endometrial hyperplasia. We found more of proliferative type of endometrium in hysterectomy specimen with adenomyosis.

CONCLUSION

This study shows that adenomyosis is common in women who undergone hysterectomy and that it is more frequent among women reporting dysmenorrhea, menorrhagia and chronic pelvic pain. It is also common in those with bulky uterus. The choice of therapy of adenomyosis is hysterectomy in women with completed family and had failed medical therapy.

REFERENCES