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ABSTRACT

Objective: To determine the prevalence of cervical cancer, staging, presenting symptoms, gestational age at diagnoses, screening and diagnostic methods, and pregnancy outcomes of pregnant women at Siriraj Hospital.

Materials and Methods: Medical records of pregnant women diagnosed with cervical cancer at Siriraj Hospital from 1998 to 2010 were reviewed.

Results: Twelve cases of pregnant women with cervical cancer were identified during this study period of 13 years. Eight of them were diagnosed with stage I and 4 of them were in stage II according to pathological diagnosis. All patients presented with the symptom of abnormal bleeding per vagina. Four patients with stage II disease were diagnosed early in pregnancy and chose to terminate pregnancy. Five patients with stage I disease delivered by cesarean section, radical hysterectomy with pelvic node dissection (RHND) was performed following pregnancy termination in 2 cases whose future fertility is not desired.

Conclusion: The prevalence of cervical cancer during pregnancy at Siriraj Hospital was low. Cervical cancer screening in all women should be considered in the program before planning a conception.

Keywords: cervical cancer, pregnancy, management

Introduction

About 1-3% of cervical cancer are diagnosed during this vulnerable period of pregnancy(1). About 50% of cases are diagnosed prenatally and the rests are diagnosed during postpartum period(2). Most pregnant patients are diagnosed at the early stage of disease(3). This disease may effect pregnancy outcomes. This study presents the prevalence, screening and diagnostic methods of cervical cancer and pregnancy outcome during a 13 year period in a single institute.

Materials and Methods

The study was approved by the Ethics Committee
at Faculty of Medicine Siriraj Hospital, Mahidol University, EC number Si009/2011. Medical records of women diagnosed with cervical cancer during pregnancy at Siriraj Hospital from the year 1998 to 2010 were reviewed for their presenting symptoms, screening and diagnostic methods, staging, gestational age at diagnoses and pregnancy outcomes. SPSS version 13 was used to analyze the data. Numerical variables were demonstrated with means and ranges.

Results

During the period of study, 12 cases of pregnant women with newly diagnosed of cervical cancer were identified. There were 8 cases of stage I cervical cancer and 4 cases of stage II cervical cancer. The median maternal age (range) was 36 (27-44) years old. Mean gestational age (range) at diagnosis was 19 (8-32) weeks of gestation. Mean gestational age (range) of diagnoses of pregnant patients with cervical cancer stage I and II were 22.5 (9-32) and 12 (8-14) weeks of gestation, respectively. Abnormal vaginal bleeding was the presenting symptom in all patients. Cervical biopsy under satisfactory colposcopy was performed in all cases to confirm the diagnosis. Loop electrosurgical excision procedure (LEEP) for excluding invasive disease was performed in 2 cases at gestational the age of 13 and 26 weeks of gestation (pregnant patient number 7 and 10).

Patients with stage II cervical cancer (4 cases) had one spontaneous and three 3 induced abortion (one spontaneous missed abortion that required uterine evacuation and curettage and three therapeutic abortions that required medical induction). The pregnant women with stage I cervical cancer with gestational age below 24 weeks (3 cases from 8 cases) underwent therapeutic abortion by medical induction while those stage I cervical cancer with gestational age of 24 weeks or more (5 cases from 8 cases) had cesarean delivery. Mean gestational age (range) of therapeutic abortion and delivery were 18.1 (14-23) and 35.4 (31-38) weeks of gestation, respectively. Median (range) neonatal body weight was 3,240 grams (1,470-3,460 grams). Postpartum hemorrhage after cesarean section was encountered in pregnant patient number 6. All variables were presented in Table 1. Radical hysterectomy with pelvic node dissection (RHND) was performed in 2 patients who did not desired fertility (pregnant patient number 1 and 3).
Table 1. Details of pregnant patients with cervical cancer during year 1998-2010.

<table>
<thead>
<tr>
<th>Year</th>
<th>Pregnant patient (number)</th>
<th>Maternal age (years)</th>
<th>GPA</th>
<th>Staging</th>
<th>Gestational age of diagnosis</th>
<th>Presenting symptom</th>
<th>Screening and diagnostic method</th>
<th>Gestational age of delivery</th>
<th>Gestational age of abortion</th>
<th>Management</th>
<th>Neonatal body weight (grams)</th>
<th>Maternal complication</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1</td>
<td>27</td>
<td>2,1,0</td>
<td>I</td>
<td>30</td>
<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
<td>37</td>
<td>-</td>
<td>C/S, RHND</td>
<td>3,460</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>44</td>
<td>1,0,0</td>
<td>II</td>
<td>12</td>
<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
<td>-</td>
<td>15</td>
<td>Missed abortion</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2008</td>
<td>3</td>
<td>32</td>
<td>3,2,0</td>
<td>I</td>
<td>28</td>
<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
<td>38</td>
<td>-</td>
<td>C/S, RHND</td>
<td>3,240</td>
<td>-</td>
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<tr>
<td>2007</td>
<td>4</td>
<td>35</td>
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<td>I</td>
<td>16</td>
<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
<td>-</td>
<td>23</td>
<td>t-abortion</td>
<td>-</td>
<td>-</td>
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<tr>
<td>2006</td>
<td>5</td>
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<td>I</td>
<td>9</td>
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<td>PAP, cervical biopsy</td>
<td>-</td>
<td>14</td>
<td>t-abortion</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>6</td>
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<td>I</td>
<td>24</td>
<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy, LEEP</td>
<td>34</td>
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<td>C/S</td>
<td>1,890</td>
<td>PPH</td>
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<tr>
<td>2004</td>
<td>7</td>
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<td>I</td>
<td>27</td>
<td>Abnormal bleeding</td>
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<td>31</td>
<td>-</td>
<td>C/S</td>
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<td>C/S, RHND</td>
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<td>-</td>
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<tr>
<td></td>
<td>9</td>
<td>42</td>
<td>4,2,1</td>
<td>II</td>
<td>14</td>
<td>Abnormal bleeding with cervical mass</td>
<td>PAP, cervical biopsy cervical biopsy</td>
<td>-</td>
<td>20</td>
<td>t-abortion</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2000</td>
<td>10</td>
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<td>II</td>
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<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
<td>-</td>
<td>19</td>
<td>t-abortion</td>
<td>-</td>
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<tr>
<td>1999</td>
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<td>Abnormal bleeding</td>
<td>PAP, cervical biopsy</td>
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<td>20</td>
<td>t-abortion</td>
<td>-</td>
<td>-</td>
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<tr>
<td>1999</td>
<td>12</td>
<td>33</td>
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<td>II</td>
<td>8</td>
<td>Abnormal bleeding</td>
<td>Cervical biopsy</td>
<td>-</td>
<td>16</td>
<td>t-abortion</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

GPA = gravida, parity, abortion  
PAP = Papanicolaou test  
C/S = cesarean section  
RHND = radical hysterectomy with pelvic node dissection  
t-abortion = therapeutic abortion  
PPH = postpartum hemorrhage
Discussion

Cervical cancer can be found during pregnancy. The symptoms and signs of cervical cancer in pregnancy are relevant to the clinical stage and size of lesion. All pregnant women with stage IA and half of those with stage IB were symptomatic at the time of diagnosis\(^4\). Abnormal vaginal bleeding and discharge were the presenting symptoms of pregnant patients with stage IB. Patient with advanced stage may present with the symptoms of pelvic pain, sciatica-type leg pain, flank pain, chronic anemia and shortness of breath. From the present study, all pregnant patients with cervical stage I and II presented with abnormal vaginal bleeding, only one case presented with cervical mass.

By reason of similar vaginal bleeding in complicated pregnancy such as abortion or ectopic without cervical cancer, delayed diagnosis of cervical cancer during pregnancy may be occurred. Mean duration of symptoms before diagnosis was 4.5 months\(^5\). The anatomical and physical changes of the cervix during pregnancy including cervical decidualization, ectropion, stromal edema and cervical ripening result in the difficulty of diagnosis for cervical cancer. However, if there is a gross lesion, the cervical cancer can easily be diagnosed at any gestational age. Therefore, Papanicolaou (PAP) test should be performed in all pregnant women with abnormal uterine bleeding and cervical biopsy should be done in suspected of cervical cancer mass. Almost all pregnant women in this study underwent PAP test and cervical biopsy for definite diagnose.

Diagnosis of cervical cancer can be suspected by abnormal screening test (PAP test)\(^6\). Abnormal PAP smear during pregnancy and non-pregnant population are the same rate of 5-8%. Biopsy should be performed when there was a gross lesion suspicious for malignancy. Colposcopy with cervical biopsy can safely be performed during pregnancy\(^7\). Monsel’s solution or suturing can be applied to control bleeding. However, cervical curettage should be avoided due to the risk of pregnancy disruption\(^8\). All pregnant women from this study underwent colposcopic cervical biopsy for definite diagnosis without endocervical curettage.

Colposcopy during pregnancy should be performed by experienced colposcopist. Physiologic changes of the cervix including increase vascularity during pregnancy can mimic cancer\(^9\). On the other hand, cervical malignancy in early pregnancy may be unrecognized due to the normal eversion of squamo-columnar junction or benign cervical decidualization. Unsatisfactory colposcopy in early pregnancy should be followed with the repeated procedure in the next 6-12 weeks due to the migration of transformation zone to ectocervix at 20 weeks of gestation\(^7\). Fortunately, from our study all patients underwent satisfied colposcopy without repeated procedure.

Diagnostic conization or Loop Electrocautery Excisional Procedure (LEEP) should be postponed until postpartum period\(^9\). However, the procedure can be performed only in the indicated case that confirmation of the invasive lesion will alter the timing or mode of delivery. The proper time for diagnostic conization or LEEP is 14-20 weeks of gestation. The procedures should not be performed within 4 weeks before delivery due to the hemorrhage or extend of the fresh wound\(^10\). From our study, 2 cases underwent LEEP for excluding invasive disease with the results of stage I and II cervical cancer. Other complications of diagnostic conization or LEEP during pregnancy include hemorrhage (5-15%), miscarriage, preterm labor/delivery and infection\(^11\) which was not detected in this study.

There was also a report that excising a coin-shape specimen instead of cone-shape specimen can limit disruption of the endocervical canal and decrease morbidities of blood loss and disturbing the fetal membranes\(^12\). However, more data are needed before conclusion can be drawn.

Management of the pregnant patient with cervical cancer depends on the stage of disease and gestational age. Major concerns are termination or continuation of pregnancy, delay of definite treatment, mode of therapy during pregnancy or timing and route of delivery. If the fetus is close to term, immediately delivery should be proceeded. In the early pregnancy, management is up to the mother decision. However, if the disease is advanced or progressed, definitive treatment of patients...
is recommended. From this study, all pregnant patients with stage II (4 cases), diagnosed during early pregnancy (before 24 weeks of gestation), 3 cases underwent therapeutic abortion and one case had spontaneous missed abortion.

Delayed treatment does not increase the maternal risk in women with early stage (IA-IB1) of cervical cancer in the late second and early third trimester. The women with microscopic (stage IA, diagnosed via conization or LEEP with negative margins) cervical cancer is accepted for vaginal delivery. The women with stage IB at least should have a cesarean delivery. However, the women with early stage invasive disease (IB-IIA) with no plan for subsequent pregnancy, radical hysterectomy should be performed. If there was a plan of subsequent pregnancy, serial cervical screening with PAP test must be proceeded. From this study, all pregnant patients with stage I were delivered by cesarean section. Only 2 cases without plan of further pregnancy underwent RHND.

In conclusion, PAP test should be considered in the screening program before planning of pregnancy in order to decrease the complication of cervical cancer during pregnancy and to provide the optimal pregnancy outcome.

Acknowledgement

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References

มะเร็งปากมดลูกในสตรีตั้งครรภ์ที่โรงพยาบาลศิริราช: การศึกษาอ่อนหลัง 13 ปี (พ.ศ. 2541-2553)

ชัยรัตน์ ลีลาพัฒนดิษฐ์, สายฝน ชวาลไพบูลย์, ศิริพงศ์ สวัสดิ์มงคล

วัตถุประสงค์: เพื่อศึกษาความชุกของมะเร็งปากมดลูก, ระยะของมะเร็งปากมดลูก, อาการแสดง, อายุครรภ์ที่วินิจฉัย, วิธีการตรวจคัดกรองและวินิจฉัย, และผลของการตั้งครรภ์ของสตรีที่มีมะเร็งปากมดลูกที่โรงพยาบาลศิริราช

วัสดุและวิธีการ: ได้ทำการเก็บและวิเคราะห์ข้อมูลจากเวชระเบียนของสตรีตั้งครรภ์ที่เป็นมะเร็งปากมดลูกที่โรงพยาบาลศิริราชในระยะเวลา 13 ปีตั้งแต่ พ.ศ. 2541-2553

ผลการศึกษา: ในช่วง 13 ปี, พ.ศ. 2541-2553, พบความชุกของมะเร็งปากมดลูกในสตรีตั้งครรภ์จำนวน 12 ราย โดย 8 ราย อยู่ในระยะที่ 1 และ 4 รายอยู่ในระยะที่ 2 สาหรับการวินิจฉัยทุกรายสามารถพบได้จากการตรวจด้วยภูมิคุ้มกันต่อเนื้อหาการวินิจฉัยที่ผ่านไป 4 ราย ซึ่งได้รับการวินิจฉัยในการตั้งครรภ์ระยะแรกได้รับการทำแท่ง และสตรีที่เป็นมะเร็งปากมดลูกระยะที่ 1 จำนวน 5 ราย จาก 8 ราย ได้คลอดโดยการผ่าตัดท่อด โดย 2 ราย ที่ไม่ต้องการตั้งครรภ์ต่อไปได้รับการผ่าตัดมดลูกและเวลาต่อมาเนื้ืองในช่องคลอดที่ยังเป็น

สรุป: ความชุกของมะเร็งปากมดลูกในสตรีตั้งครรภ์ที่โรงพยาบาลศิริราชต่ำากว่า ควรทำการตรวจคัดกรองมะเร็งปากมดลูกในสตรีทุกรายก่อนที่จะวางแผนการตั้งครรภ์.