Sonological Evaluation of Ectopic Pregnancy-an Analysis of 50 Cases

Dipu Das¹, Sandip Kanungo², Shahina Akhter³, Natia Rahnuma⁴

Abstract

Introduction: Ectopic pregnancy is the implantation of a fertilized egg in a location outside of the uterine cavity, including the fallopian tubes, cervix, ovary, cornual region of the uterus, and the abdominal cavity. Objective: To evaluate the sonological findings of ectopic pregnancy. Materials and Methods: A descriptive study was carried out at ultrasound unit in Lab-Aid diagnostic, Comfort Medical Services and Green View Diagnostic Complex in Sylhet city between January 2012 to January 2014. We included all cases with confirmed diagnosis of ectopic pregnancy, all antenatal mothers who are present in antenatal unit in a selected Hospital and excluded mothers with other associated medical condition. Results: Common clinical pattern were shock, marked pallor ness, abdominal pain, amenorrhea and irregular vaginal bleeding 52%, 66%, 62%, 54% and 38% respectively. Risk factor of ectopic pregnant in this study, 40% had history of infertility, 06% had Non tuberculous PID, 70% had no risk factor, 04% had tuberculous PID, 14% had previous abdominal pelvic surgery, 18% had previous ectopic and 10% had endometriosis. Conclusion: Common clinical pattern were shock, marked pallor ness, abdominal pain, amenorrhea and irregular vaginal bleeding. History of infertility, Non tuberculous PID, no risk factor, tuberculous PID, previous abdominal pelvic surgery, previous ectopic and endometriosis were risk factor of ectopic pregnant in this study.

Key words: Ectopic pregnancy, Sonological evaluation.

Number of Tables: 05; Number of References: 20; Number of Correspondence: 04.

*1. Corresponding Author: Dr. Dipu Das
   Assistant Professor
   Dept of Obs and Gynae
   Jalalabad Ragib Rabeya Medical College Hospital, Sylhet.
   Email: drsandip058@gmail.com
   Mobile: 01711449703

2. Dr. Sandip Kanungo
   Assistant Professor
   Family Medicine
   Bangladesh College of General Practitioner, Dhaka.

3. Dr. Shahina Akhter
   Assistant Professor
   Dept of Obs and Gynae
   Jalalabad Ragib Rabeya Medical College Hospital, Sylhet.

4. Dr. Natia Rahnuma
   Assistant Professor
   Dept of Obs and Gynae
   Jalalabad Ragib Rabeya Medical College Hospital, Sylhet.

Introduction:
Ectopic pregnancy is the implantation of a fertilized egg in a location outside of the uterine cavity, including the fallopian tubes, cervix, ovary, cornual region of the uterus, and the abdominal cavity. Ectopic pregnancy can lead to massive haemorrhage, infertility, or death¹. At first an ectopic pregnancy develops like a normal pregnancy and the same symptoms such as nausea and tender breasts will be present. However, some women do not have these symptoms and do not suspect that they might be pregnant. The vaginal bleeding can vary from being slight or brown vaginal discharge to being like a normal period². An ectopic pregnancy starts out in the unruptured state, which is when the mass is still small enough to fit in the fallopian tube. However, if left untreated for too long, the mass will continue to grow until it eventually gets so large that it will rupture the tube. All these treatments are forms of abortion and woman’s chances of survival if she does not abort are very less comparatively³. Ectopic pregnancy is a high-risk condition that occurs in 1.9 percent of reported pregnancies. The condition is the leading cause of pregnancy-related death in the first trimester. Pregnancies in the fallopian tube account for 97 percent of ectopic pregnancies: 55 percent in the ampulla; 25 percent in the isthmus; 17 percent in the fimbria; and 3 percent in the abdominal cavity, ovary, and cervix. Ruptured ectopic pregnancy accounts for 10 to 15 percent of all maternal deaths⁴. A study on woman with an ectopic pregnancy reported that increased knowledge and awareness among health-care providers as well as technologic advances have decreased the risk of death from ectopic pregnancies. More sensitive pregnancy tests and improved diagnostic procedures have contributed to earlier and more rapid diagnosis of ectopic pregnancy⁵. Chronic ectopic pregnancy is often an enigma and a correct diagnosis is frequently not made until exploratory laparotomy. Hemodynamic stability, chronicity of symptoms, and a high incidence of false-negative pregnancy tests and culdocentesis results are clinical characteristics distinguishing it from the more common acute ectopic pregnancy. Dense adhesions and occasional abscess formation are surgical features that characterize the chronic ectopic pregnancy⁶. The value of ultrasound in ectopic pregnancy diagnosis has been demonstrated⁷⁸. Ectopic pregnancy incidence has risen, and although only approximately 1% of gestations are extrauterine, these account for 4% of direct maternal deaths⁹. The combination of specific ultrasound findings with serum β-human chorionic gonadotropin measurements
can detect as many as 96% of ectopic pregnancies with a specificity of 100%. These same studies show a positive predictive value of 100% and a negative predictive value of 92% in women with a clinical suspicion of an ectopic pregnancy16. Given established risk factors or clinical suspicion, early ultrasound is recommended.

**Materials and Methods:**
A descriptive study was carried out at ultrasound unit in Lab-Aid diagnostic, Comfort Medical Services and Green View Diagnostic Complex in Sylhet city between January 2012 to January 2014. We included all cases with confirmed diagnosis of ectopic pregnancy, all antenatal mothers who are present in antenatal unit in a selected Hospital and excluded mothers with other associated medical condition. The diagnosis was primarily made clinically later on supplemented by sonological findings, HCG estimation, surgical findings and histopathological report. A proforma was used to collect the details regarding age, parity, risk factors, clinical pattern and management of the cases. Data were fed to SPSS program version 17 to analyse the results in terms of frequencies and percentages.

**Results:**
Total ultrasound was done in pregnant patients 3139 patients, out of them 56(1.78%) patients was suspected ectopic pregnancy, and finally included in this study 50 cases (Table-I).

**Table-I: Prevalence of ectopic pregnancy of the study population.**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total ultrasound in pregnant patients</td>
<td>3139</td>
<td>100%</td>
</tr>
<tr>
<td>Ectopic pregnant suspected</td>
<td>56</td>
<td>1.78%</td>
</tr>
<tr>
<td>Finally included</td>
<td>50</td>
<td>1.59%</td>
</tr>
</tbody>
</table>

Mean age was 24.59±4.86 minimum age was 18 and 33 years, maximum age group was 26-30 years of age which was 42% (Table-II).

**Table-II: Age group distribution of the study population.**

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤20 years</td>
<td>09</td>
<td>18</td>
</tr>
<tr>
<td>21-25 years</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>26-30 years</td>
<td>21</td>
<td>42</td>
</tr>
<tr>
<td>&gt;30 years</td>
<td>07</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td>Mean ±SD</td>
<td>24.59±4.86</td>
<td>Range 18-33 years</td>
</tr>
</tbody>
</table>

Majority 46% was nulli para, 38% were primi para and 16% was multi para (Table-III).

**Table-III: Distribution of parity.**

<table>
<thead>
<tr>
<th>Parity</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nulli para</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>Primi para</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>Multi para</td>
<td>08</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

Common clinical pattern were shock, marked pallor ness, abdominal pain, amenorrhea and irregular vaginal bleeding 52%, 66%, 62%, 54% and 38% respectively (Table-IV).

**Table-IV: Clinical pattern of the study population.**

<table>
<thead>
<tr>
<th>Clinical pattern</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shock</td>
<td>26</td>
<td>52</td>
</tr>
<tr>
<td>Marked pallor ness</td>
<td>33</td>
<td>66</td>
</tr>
<tr>
<td>Abdominal pain</td>
<td>31</td>
<td>62</td>
</tr>
<tr>
<td>Amenorrhea</td>
<td>27</td>
<td>54</td>
</tr>
<tr>
<td>Irregular vaginal bleeding</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>Adnexal Mass</td>
<td>07</td>
<td>14</td>
</tr>
<tr>
<td>Syncopal attacks</td>
<td>04</td>
<td>08</td>
</tr>
<tr>
<td>Jaundice</td>
<td>01</td>
<td>02</td>
</tr>
</tbody>
</table>

Risk factor of ectopic pregnant in this study, 40% had history of infertility, 06% had Non tuberculous PID, 70% had no risk factor, 04% had tuberculous PID, 14% had previous abdominal pelvic surgery, 18% had previous ectopic and 10% had endometriosis (Table-V).

**Table-V: Risk factors of the study population.**

<table>
<thead>
<tr>
<th>Risk factors</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>History of infertility</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Non tuberculous PID</td>
<td>03</td>
<td>06</td>
</tr>
<tr>
<td>No risk factor</td>
<td>35</td>
<td>70</td>
</tr>
<tr>
<td>Tuberculous PID</td>
<td>02</td>
<td>04</td>
</tr>
<tr>
<td>Previous abdominal pelvic surgery</td>
<td>07</td>
<td>14</td>
</tr>
<tr>
<td>Previous ectopic</td>
<td>09</td>
<td>18</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>05</td>
<td>10</td>
</tr>
</tbody>
</table>

**Discussion:**
The current study found the incidence of ectopic pregnancy as 1.59% deliveries. Common clinical pattern were shock, marked pallor ness, abdominal pain, amenorrhea and irregular vaginal bleeding were found as the main predisposing factors. Worldwide the incidence has been reported as between 1:84 to 1:23011. Our reported incidence is comparable with the reports from other developing countries12,13. However it was found lower than that reported by industrialized countries11.

The reason can be related to the availability of advanced diagnostic aids for early asymptomatic ectopic pregnancies as well as more organized set up of health care system for registration in developed countries14. Majority of the patients were of low parity, younger age and had the history of infertility, non tuberculous PID, no risk factor, tuberculous PID, previous abdominal pelvic surgery, previous ectopic and endometriosis were the risk factors. Women often become victims of chronic pelvic inflammatory disease. Westrom and Pirii found pelvic inflammatory disease as the strongest risk factor for the pathogenesis of ectopic pregnancy15. Rose16 reported a 9 fold increased risk for ectopic pregnancy in patients with pelvic inflammatory disease and emphasized the importance of usage of condoms. The alarming rise of pelvic inflammatory disease need a preventive strategy with promotion of health education, in particular the safe sexual practice in our community. Emphasis should be towards treatment of both partners for complete cure. The classical pattern of period of amenorrhea and abdominal pain was lacking in most of the patients, however a provisional diagnosis was made in the light of risk factors, clinical features and sonological findings. Nevertheless the diagnosis
was initially missed in three patients who were admitted at medical ward as suspected case of chronic liver disease due to the clinical presentation of anemia and jaundice. Later on these patients were identified as cases of ruptured ectopic with massive hemoperitoneum. Considering the variable presentation of ectopic pregnancy the diagnosis of ectopic requires a high index of suspicion regarding its possibility in reproductive age, particularly with pre-existing risk factors.

Majhi AK et al study reported the peak age of incidence was 26-30 years; primi were the most sufferers. There were 65.0% patients was had identifiable risk factors. Tubectomy (14.4%), history of abortion (26.1%), infertility (12.2%), pelvic inflammatory diseases (12.8%) and history of previous surgery (11.1%) were the important risk factors. Amenorrhea (76.1%), abdominal pain (86.1%) and vaginal bleeding (42.2%) were the frequent presenting complaints. There were 87.8% patients was had pallor, 9.4% were admitted with features of shock. Cervical motion tenderness (82.2%) was the most frequent sign. Urinary beta-hCG was positive in 96.1% cases. Ultrasonography revealed diagnosis in 2/3rds cases among 129 patients. Culdocentesis evoked the diagnosis in 73.3% cases out of 135 patients. In 95.0% cases it was of tubal variety, 70.2% ruptured, 19.9% tubal abortion and 9.9% unruptured. Surgery by open method in the form of salpingectomy (81.9%), salpingo-oophorectomy (9.3%) and salpingostomy (5.3%) were the mainstay of management. Expectant management and medical therapy can be offered only in 1.2% and 1.75% respectively. There was no case fatality. By reducing and identifying the risk factors and 'catching' the patients at the earliest it is possible to improve the prognosis so far as morbidity, mortality and fertility are concerned. Ectopic pregnancies are a common gynecologic emergency that typically are impacting otherwise healthy individuals and can have significant morbidity and mortality. Continued improvement in the ultrasonographic evaluation of these patients will aid in decreasing the mortality that continues to be associated with ruptured ectopic pregnancies.

Conclusion:
Common clinical pattern were shock, marked pallor ness, abdominal pain, amenorrhea and irregular vaginal bleeding. History of infertility, non tuberculous PID, no risk factor, tuberculous PID, previous abdominal pelvic surgery, previous ectopic and endometriosis were risk factor of ectopic pregnant in this study.

Conflict of Interest: None.

Acknowledgement:
This is my great pleasure to express profound gratitude to Medicine Today.

References:

https://doi.org/10.1136/jfprhc-2011-0073
PMid:21727242 PMCID:PMC3213855
3. www.womens-health.co.uk/ectopic.asp
   https://doi.org/10.1097/AOG.0b013e3181d0c328
PMid:20177279
   https://doi.org/10.1136/jfprhc-2011-0073
PMid:21727242 PMCID:PMC3213855
   https://doi.org/10.1097/01.AOG.0000127595.54974.0c
PMid:15172855
   https://doi.org/10.1148/radiology.174.2.1688662
PMid:1688662
   https://doi.org/10.1148/radiology.169.1.3047783
PMid:3047783
   https://doi.org/10.1148/radiology.174.2.1688662
PMid:1688662
However, some women do not have these symptoms and do symptoms such as nausea and tender breasts will be present. Pregnancy develops like a normal pregnancy and the same tubes, cervix, ovary, cornual region of the uterus, and the Ectopic pregnancy is the implantation of a fertilized egg in a tube. However, if left untreated was multi para (Table-III).

Table -II: Age group distribution of the study population. was 42% (Table-II).

Mean age was 24.59(±4.86) minimum age was 18 and 33 population.

Table-I: Prevalence of ectopic pregnancy of the study report. A proforma was used to collect the details regarding medical condition. The diagnosis was primarily made given established risk factors or clinical suspicion of an ectopic pregnancy10. Given established risk factors or clinical suspicion of an ectopic pregnancy10. These same studies show a positive specificity of 100%. These same studies show a positive specificity of 100%.

Facial cramps, early ultrasound is recommended.

Given established risk factors or clinical suspicion of an ectopic pregnancy10. Given established risk factors or clinical suspicion of an ectopic pregnancy10. These same studies show a positive specificity of 100%.

92% in women with a clinical suspicion of an ectopic pregnancy10. Given established risk factors or clinical suspicion of an ectopic pregnancy10. These same studies show a positive specificity of 100%.

However it was found lower than that reported by industrial.

Women often become victims of chronic pelvic inflammatory disease. and endometriosis were the risk factors. Women often become victims of chronic pelvic inflammatory disease. and endometriosis were the risk factors. Women often become victims of chronic pelvic inflammatory disease. and endometriosis were the risk factors.

However it was found lower than that reported by industrial.

PID, previous abdominal pelvic surgery, previous ectopic pregnancy15. The classical treatment of both partners for complete cure. The classical treatment of both partners for complete cure.

emphasis should be towards promotion of health education, in particular the safe sexual practice in our community. Emphasis should be towards promotion of health education, in particular the safe sexual practice in our community. Emphasis should be towards promotion of health education, in particular the safe sexual practice in our community.

The alarming rise of the importance of usage of condoms. The alarming rise of the importance of usage of condoms. The alarming rise of the importance of usage of condoms.

Discussion:

Table-V: Risk factors of the study population.

Risk factor, 04% had tuberculous PID, 14% had previous history of infertility, 06% had Non tuberculous PID, 70% had no risk factor of ectopic pregnant in this study. 40% had histological and endometrial的朋友. Common clinical pattern were shock, marked pallor ness, hematemesis (76.1%), abdominal pain (86.1%) and vaginal hemorrhage (9.9%) unruptured. Surgery by open approach System. Chronic Diseases in Canada. 2002;23(1):179-183.

There were 87.8% patients was had pallor, 9.4% were admitted with features of shock. Cervical motion tenderness (92.8%) was the most frequent sign. Urinary beta-hCG was elevated in 96.1% cases. Ultrasonography revealed diagnostic aids for early asymptomatic ectopic pregnancies are a common gynecologic emergency that often evoked the diagnosis in 73.3% cases out of 135 patients. In 2012 to January 2014. We included all cases with medical therapy can be offered only in 1.2% and 1.75% respectively. There was no case fatality. By reducing and...