

# Management of Ectopic Pregnancy in a Tertiary Care Hospital by Surgery

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## Abstract

**Introduction:** Tubal ectopics if large, uncontrollably bleeding or severely damaged need radical surgery (salpingectomy), otherwise conservative surgery (salpingotomy, salpingostomy) is the way of operative management. Laparoscopic surgery usually done in case of haemodynamically stable condition.

**Objective:** To explore the different ways of surgical management of ectopic pregnancy in a tertiary care hospital.

**Materials and methods:** This cross sectional study was carried out in the Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Hospital and Dhaka Medical College Hospital during August 2005 and June 2006. The study population consisted of 50 women with ectopic pregnancy. Selected women underwent meticulous history taking and physical examinations. Some investigations like ultrasonography, culdocentesis, urine for pregnancy tests were done. Patients were treated by either radical or conservative surgery.

**Results:** All (100%) women had abdominal tenderness. Ectopic pregnancy was diagnosed by history, physical examination and culdocentesis (84%), ultrasonography (12%) and laparotomy (4%). Two (4%) women were treated by conservative surgery, while the rest by radical surgery; 40 (80%) underwent unilateral salpingectomy, 3 (6%) unilateral salpingectomy with contralateral tubectomy, 2 (4%) unilateral salpingo oophorectomy, 1 (2%) total abdominal hysterectomy and 2 (4%) resection of rudimentary horn.

**Conclusion:** Most common diagnostic tools were by history, physical examination and culdocentesis and common management was unilateral salpingectomy.

**Key words:** Ectopic pregnancy, Diagnosis, Management

## Introduction:

Ectopic gestations are pregnancies resulting from misimplantation of the blastocyst, in an aberrant area that is usually not conducive to further development and growth (anywhere else apart from the endometrial lining of uterine cavity). It not only leads to fetal wastage, but also increases the incidence of maternal morbidity, mortality and problems of future fertility<sup>1</sup>.

Site of ectopic pregnancies are (a) tubal pregnancy 95%, includes ampullary 55%, isthmic 25%, fimbrial 17% and interstitial 2%, and (b) others 5%, includes cervical, ovarian and abdominal. But most abdominal pregnancies are from tubal abortion or rupture and subsequent implantation in the bowel, omentum or mesentery<sup>2</sup>.

The classic triad of symptoms of ectopic pregnancy are amenorrhoea, abdominal pain and appearance of vaginal bleeding. Feeling of nausea, vomiting, fainting attacks, even to the extent of syncope, may be present<sup>3</sup>. Breen in his series showed 85% patients presenting with history of amenorrhoea<sup>4</sup>. Ratnam reported in this series 75.9% who presented with cervical movement tenderness<sup>5</sup>.

Early detection of ectopic pregnancy before rupture presents a diagnostic challenge. Lawson showed 76% cases positive on ultrasonography with false negative result in 33% cases, colpoopuncture was positive in 82.18% cases<sup>6</sup>.

An accurate history taking and proper physical examination are considered to be most important in

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the diagnosis of ectopic pregnancy. It is well known that the diagnosis of ectopic pregnancy is difficult as the patient may present with varied clinical picture. The mode of presentation and clinical features are sometimes confusing, and there is often considerable delays before the diagnosis can be made with confidence<sup>7</sup>.

As soon as the diagnosis is made, immediate operative treatment is essential because the priority is to treat ruptured ectopic pregnancy which is life threatening to the mother. Though many of the unruptured tubal pregnancy, as well as ruptured tubal pregnancy, may be managed by laparoscopic technique, very early unruptured tubal pregnancy, as well as some chronic tubal pregnancy, have been treated with systemic methotrexate<sup>8</sup>.

Advantages of medical treatment are: (a) significant reduction of operative morbidity, hospital stay, as well as cost, and (b) improved chance of subsequent successful pregnancy may be a potential benefit.

Conservative surgical measure includes milking of the tube, linear salpingotomy, linear salpingostomy which may be carried out by cautery or laser and segmental resection<sup>9</sup>.

To preserve the maternal life and future fertility of the patient, high index of suspicion, early and accurate diagnosis, immediate and skillful surgery and moral responsibility remain the cornerstone of management of ectopic pregnancy.

In this study, we tried to find out best possible surgical ways of management of ectopic pregnancy cases in a tertiary care hospital.

#### Materials and methods:

This cross sectional study was carried out in the Department of Obstetrics and Gynaecology, Shaheed Suhrawardy Hospital and Dhaka Medical College Hospital during August 2005 and June 2006. The study population consisted of 50 women with ectopic pregnancy. Inclusion criteria was short period of amenorrhoea; pregnancy related symptoms; lower abdominal pain; vaginal bleeding; syncopal attack; on general examination, tachycardia, variable amount of anaemia and features of shock, and on vaginal examination, closed cervix and cervical motion tenderness was positive with tender adnexal mass, uterus slightly larger and softer than normal. Exclusion criteria was history of lower abdominal pain associated with (a) Low grade fever, anorexia, nausea/vomiting and increased white blood cells (favours appendicitis),

(b) dysuria, increased frequency and urgency of micturition (favours cystitis), and (c) spiking fever/chills with increased frequency and urgency of micturition (favours urinary tract infection).

On admission, all selected women underwent meticulous history taking and physical examinations. Some investigations like ultrasonography, culdocentesis, urine for pregnancy test were done.

All collected information were recorded in predesigned data collection sheet for each individual patient. Collected data were compiled and appropriate statistical analysis was done using computer based software, Statistical Package for Social Science (SPSS).

#### Results:

Table I characteristics of the study population. Most of the women belonged to age group 26-30 years (42%), followed by 21-25 years (30%), >30 years (20%) and <20 years (8%). Ten (20%) women were primigravida and the rest 40 (80%) multigravida. All 50 (100%) women presented with abdominal pain; in order of frequency, other presenting features were period of amenorrhoea (80%), shock (50%), per vaginal bleeding (40%), syncopal attack (30%) and early pregnancy symptoms (24%). Duration of amenorrhoea (n=40) was 6-8 weeks (75%) and >8 weeks (25%). Character of pain was severe in 35 (70%) and mild to moderate in 15 (30%) cases.

**Table-I**  
*Characteristics of the study subjects (n=50)*

| Parameters               | Number of patients | Percentage |
|--------------------------|--------------------|------------|
| Age (years)              |                    |            |
| ≤20                      | 4                  | 8.0        |
| 21-25                    | 15                 | 30.0       |
| 26-30                    | 21                 | 42.0       |
| >30                      | 19                 | 20.0       |
| Gravidity                |                    |            |
| Primi                    | 10                 | 20.0       |
| Multi                    | 40                 | 80.0       |
| Presenting symptoms      |                    |            |
| Abdominal pain           | 50                 | 100.0      |
| Period of amenorrhoea    | 40                 | 80.0       |
| Shock                    | 25                 | 50.0       |
| Per vaginal bleeding     | 20                 | 40.0       |
| Syncope attack           | 15                 | 30.0       |
| Early pregnancy symptoms | 12                 | 24.0       |
| Amenorrhoea (n=40)       |                    |            |
| 6-8 weeks                | 30                 | 75.0       |
| >8 weeks                 | 10                 | 25.0       |
| Character of pain        |                    |            |
| Severe                   | 35                 | 70.0       |
| Mild to moderate         | 15                 | 30.0       |

Table II shows predisposing factors for ectopic pregnancy. Most common predisposing factors were pelvic inflammatory disease (PID) in 26 (52%), followed by abortion/MR in 17 (34%), IUCD in 7 (14%), history of lower abdominal surgery in 4 (8%), subfertility in 3 (6%), history of tuberculosis in 2 (4%) and history of ectopic pregnancy in 1 (2%) cases.

**Table-II**  
*Predisposing factors*

| Variables               | Number of patients | Percentage |
|-------------------------|--------------------|------------|
| PID                     | 26                 | 52.0       |
| Abortion/MR             | 17                 | 34.0       |
| IUCD                    | 7                  | 14.0       |
| Lower abdominal surgery | 4                  | 8.0        |
| Infertility             | 3                  | 6.0        |
| Tuberculosis            | 2                  | 4.0        |
| Ectopic pregnancy       | 1                  | 2.0        |

Signs and symptoms of ectopic pregnancy were abdominal tenderness in all 50 (100%), pain on movement of cervix in 46 (92%), abdominal rigidity in 38 (76%), muscle guard in 32 (64%), bulky uterus in 26 (52%), abdominal mass in 7 (14%) and rebound tenderness in 6 (12%) women (Table III).

**Table-III**  
*Signs and symptoms of ectopic pregnancy*

| Variables                  | Number of patients | Percentage |
|----------------------------|--------------------|------------|
| Abdominal tenderness       | 50                 | 100.0      |
| Pain on movement of cervix | 46                 | 92.0       |
| Abdominal rigidity         | 38                 | 76.0       |
| Muscle guard               | 32                 | 64.0       |
| Bulky uterus               | 26                 | 52.0       |
| Abdominal mass             | 7                  | 14.0       |
| Rebound tenderness         | 6                  | 12.0       |

Table IV shows diagnostic aid applied and findings. In case of 42 (84%) women, diagnosis was made by history taking, physical examination and culdocentesis, in case of 6 (12%) women by ultrasonography and in case of 2 (4%) women by laparotomy.

**Table IV**  
*Diagnostic parameters of ectopic pregnancy (n=50)*

| Variables                                       | Number of patients | Percentage |
|---|--------------------|------------|
| History, physical examination and culdocentesis | 42                 | 84.0       |
| Ultrasonography                                 | 6                  | 12.0       |
| Laparotomy                                      | 2                  | 4.0        |

Table V shows diagnostic finding. Site of ectopic pregnancy were tubal (90%), cornual (6%) and ovarian (4%). Of the 45 tubal pregnancy, right side was involved in 25 (55.6%) and left side in 20 (44.4%) cases; and condition of fallopian was ruptured in 43 (95.6%) and unruptured in 2 (4.4%) women.

**Table-V**  
*Findings of ectopic pregnancy (n=50)*

| Variables                            | Number of patients | Percentage |
|--------------------------------------|--------------------|------------|
| Site of ectopic pregnancy            |                    |            |
| Tubal                                | 45                 | 90.0       |
| Cornual                              | 3                  | 6.0        |
| Ovarian                              | 2                  | 4.0        |
| Tubal pregnancy side involved (n=45) |                    |            |
| Right                                | 25                 | 55.6       |
| Left                                 | 20                 | 44.4       |
| Condition of fallopian tube (n=45)   |                    |            |
| Ruptured                             | 43                 | 95.6       |
| Unruptured                           | 2                  | 4.4        |

Table VI shows type of management of ectopic pregnancy. Out of 50 cases, conservative surgical treatment was given to 2 (4%) women. Radical surgical treatment, such as unilateral salpingectomy was required in case of 40 (80%), unilateral salpingectomy with contralateral tubectomy in 3 (6%), unilateral salpingo oophorectomy in 2 (4%), total abdominal hysterectomy in 1 (2%) and resection of rudimentary horn in 2 (4) cases.

**Table-VI**  
*Management of ectopic pregnancy (n=50)*

| Variables   | Number of patients | Percentage |
|---|--------------------|------------|
| Unilateral salpingectomy                              | 40                 | 80.0       |
| Unilateral salpingectomy with contralateral tubectomy | 3                  | 6.0        |
| Unilateral salpingo oophorectomy                      | 2                  | 4.0        |
| Resection of rudimentary horn                         | 2                  | 4.0        |
| Total abdominal hysterectomy                          | 1                  | 2.0        |
| Conservative surgical treatment                       | 2                  | 4.0        |

### Discussion:

In the present study, 42% women belonged to age group 26-30 years, 30% to 21-25 years, 20% to >30 years and 8% to <20 years. Fernandes *et al.* found that 65% patients belonged to age group 25-35 years and 6% were adolescents<sup>10</sup>. Studies done in Bangladesh showed age incidence as 46% (26-30 years) by Nahar, as 38% (26-30 years) in a study by Zabin, and as 45% (25-34 years) by Siddiqua *et al.*<sup>11,13</sup>.

In this study, most of the women were multigravid (80%), only 20% were primigravid. This is consistent with other studies, where the proportion of ectopic in primigravida was 38% and 23.8%<sup>11,13</sup>.

General symptoms as presented by the patients included the classical triad of pain (100%), amenorrhoea (80%), per vaginal bleeding (40%), along with shock (50%), syncopal attack (30%) and early pregnancy symptoms (24%). In a study by Nahar, it was abdominal pain (100%), amenorrhoea (70%), per vaginal bleeding (50%) and early pregnancy symptoms (24%)<sup>11</sup>. In a study by Zabin, it was abdominal pain (100%), amenorrhoea (78%), per vaginal bleeding (60%) and early pregnancy symptoms (48%)<sup>12</sup>. Tancer *et al.* in their study found that patients presented with abdominal pain (90%), abnormal vaginal discharge (63.8%) and early pregnancy symptoms (23.4%)<sup>14</sup>. Siddiqua *et al.* found that their patients presented with abdominal pain (95%), amenorrhoea (65%) and per vaginal bleeding (7%)<sup>13</sup>. Amenorrhoea of 6-8 weeks was present in 75% (n=40) women, while it was found 50% in a study by Nahar, 56% by Zabin and 61% by Siddiqua *et al.*<sup>11,13</sup>.

Out of predisposing factors, pelvic inflammatory disease (PID) was present in 26 (52%) women of the present series, which is higher than the studies by Nahar (24%), Zabin (48%) and Smith (24%)<sup>11,12,15</sup>. History of induced abortion increases the risk of ectopic pregnancy 14 fold<sup>16</sup>. This study showed that 17 (34%) women presented with history of abortion/MR, which is lower than the studies by Nahar (42%) and Zabin (48%)<sup>11,12</sup>. History of IUCD use was observed in 7 (14%) cases of the present study compared to 16% by Nahar and 34% by Zabin<sup>11,12</sup>. In the present study, 3 women (6%) presented with history of infertility/subfertility, which is very low compared to the studies by Nahar (22%) and Siddiqua (28%)<sup>11,13</sup>.

In the present study, signs and symptoms of ectopic pregnancy were abdominal tenderness (100%), pain

on movement of cervix (92%), abdominal rigidity (76%), muscle guard (64%), bulky uterus (52%), abdominal mass (14%) and rebound tenderness (12%). In similar studies, Nahar observed abdominal tenderness in 100% cases, Zabin in 100% cases and Tancer *et al.* in 90.8% cases<sup>11,12,14</sup>. Pain on movement of cervix was observed in 90% cases by Nahar and in 51% cases by Tuomivaara *et al.*<sup>11,17</sup>.

In the present study, history, physical examination and culdocentesis could detect ectopic pregnancy in 42 (84%) cases, ultrasound in 6 (12%) cases and laparotomy in 2 (4%) cases. Ultrasound findings varied widely in different studies, 24% in a study by Nahar and 92% in a study by Zabin<sup>11,12</sup>. The wide variation may be due to acute and subacute condition of the patients who required immediate laparotomy before any ultrasonography test.

Present study showed that site of ectopic pregnancy was tubal in 45 (90%) cases, cornual in 3 (6%) and ovarian in 2 (4%). In a study by Nahar, the sites of ectopic pregnancy were ampullary (50%), isthmic (20%), fimbrial (10%), rudimentary horn of bicornuate uterus (6%), interstitial (8%) and abdominal (2%)<sup>11</sup>. In a study by Bouyer *et al.*, the sites of ectopic pregnancy were ampullary (70%), isthmic (12%), fimbrial (11%), ovarian (3%), interstitial (2%) and abdominal (1%)<sup>18</sup>. In a study by Siddiqua *et al.*, the sites were ampullary (64%), isthmic (19%), fimbrial (12%), rudimentary horn of bicornuate uterus (2%) and cornual (0.67%)<sup>13</sup>.

Right side of the fallopian tube was affected more commonly (55.6%) than the left (44.4%) in the present study. In the studies by Nahar and Zabin, the right side involvement was more common (54 and 79%, respectively)<sup>11,12</sup>.

Condition of fallopian tube on operation was found ruptured in 95.6% cases of the present study. However, in a study by Nahar it was 84%, by Siddiqua it was 74%<sup>11,13</sup>. In studies by Broslovsky, it was 59.1% and by Muller *et al.*, it was 44%<sup>19,20</sup>.

Unilateral salpingectomy was common in the present study (80%), unilateral salpingo oophorectomy with contralateral tubectomy was done in 6% cases, unilateral salpingo oophorectomy in 4% cases, resection of rudimentary horn in 4% cases, total abdominal hysterectomy in 2% cases and conservative surgical treatment in 4% cases. In a study by Nahar, unilateral salpingectomy was done in 58% cases, by

Zabin in 52% cases and by Siddiqua *et al.* in 71% cases<sup>11 13</sup>.

### Conclusion:

*Most common diagnostic tools were history taking, physical examination and culdocentesis and common surgical management was unilateral salpingectomy.*

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