



## STUDY OF 50 CASES OF MODERN MANAGEMENT OF ECTOPIC PREGNANCY

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### ABSTRACT

**Background:** In recent years, an increased incidence of ectopic gestation has been noted, which can be attributed to different reasons. Cases with ectopic gestation were studied with the following objectives:

- To study the incidence in various age groups
- To study predisposing factors
- To study different modes of clinical presentation
- To study different sites of ectopic pregnancy.
- To study changing trends of modern management from radical surgical method to laparoscopic and medical management

#### Methods

A study of 50 cases of tubal ectopic pregnancy was carried out from May 2009 to June 2011 in tertiary health centre. Patients managed with following treatment modalities were selected for study.

- (1) Medical management (MTX)
- (2) Laparoscopic management: Salpingostomy, Salpingectomy
- (3) Laparotomy management: Salpingostomy, Segmental resection, Fimbrial expression, Salpingectomy

#### Results

Lower abdominal pain was most common presenting symptom of ectopic pregnancy in 96% cases. The classical triad of symptoms (amenorrhea, abdominal pain and vaginal bleeding) was present in only 28% cases. PID contributed 24% cases and previous abortion contributed 28% cases indicating these two as the common risk factors. Ampulla was the commonest site for ectopic pregnancy, in 52% cases. Salpingostomy performed mainly at this site. In 6% cases ectopic pregnancy in infundibulum were treated with fimbrial expression and fimbriectomy. 22% patients were managed medically (methotrexate). These were the cases having unruptured ectopic pregnancy and ectopic mass < 4 cm. Laparoscopy was done in 34% cases, in 2 cases it was converted to laparotomy. While open laparotomy was done in 40% cases.

#### Conclusions

Ectopic pregnancy is a treatable problem. Ultrasonography plays central role in the diagnosis and management. Mode of therapy is determined by a combination of clinical symptoms, sonography findings and serum b-HCG values. Surgical management is still a cornerstone of management of ectopic pregnancy. But now scope of medical and laparoscopic management is also there. In recent years laparotomy has been replaced by laparoscopic surgery which is more conservative, minimally invasive and less time consuming which leads to quick recovery.

**KEYWORDS :** ectopic pregnancy, laparoscopy

### INTRODUCTION

#### Ectopic gestation

When fertilized ovum gets implanted at site other than normal position of uterine cavity it is known as ectopic gestation. Ectopic gestation is an unmitigated disaster of human production, and is the most important cause of maternal morbidity and mortality in 1<sup>st</sup> trimester with major cause of reduced child bearing potential. 95 – 98 % of all ectopic pregnancies are tubal.<sup>1</sup>

#### Increase incidence of ectopic gestation seen due to<sup>2</sup>

- Dramatic rise in PID (6-10 fold),
- Popularity of intrauterine devices (relative 7 times more in situ IUCD)
- ART (5-7%)

#### Decrease In Rate Of Mortality

The dramatic decrease in rate of mortality in patients of ectopic gestation can be directly attributable to earlier detection which allows us to pursue more conservative treatment modalities. High resolution USG and serum b-HCG level are helpful in early detection which allows the use of minimally invasive surgery or medical treatment which will significantly enhance both survival and conservation of reproductive capacity.<sup>3</sup>

The objectives of this study are:

- To study the incidence in various age groups.

- To study predisposing factors
- To study different modes of clinical presentation
- To study different sites of ectopic pregnancy
- To study changing trends of modern management from radical surgical method to laparoscopic and medical management

#### Course of Ectopic Pregnancy:<sup>4</sup>

- Spontaneous resolution
- Tubal abortion (Ampullary, fimbrial)
- Resolution
- Pelvic hematocele
- Hematosalpinx
- Tubal rupture (Isthmic, interstitial- at 12-16 wks)
- Rupture followed by secondary abdominal pregnancy.

#### Diagnostic modalities for ectopic pregnancy

##### Serial B-HCG titre

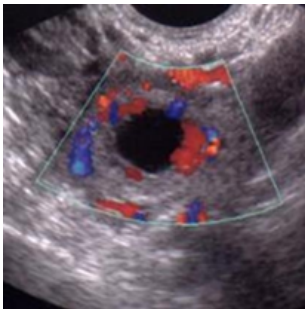
- 66% rise in B-HCG titre is seen at 2 days in normal intrauterine pregnancy (IUP).
- 15 % of normal IUP has < 66 % rise at 48 hrs.
- So 53 % rise is now considered to be normal for an IUP (Barnhart).
- Discriminating Zone 1500 IU/ml of  $\beta$ HCG<sup>5</sup>
- At this level of  $\beta$ HCG, IUP must be located.
- However 1000 IU & 2000 IU are also suggested.
- There is a decrease of 21 – 35% if spontaneous abortion occurs.

- Slower decrease or slower increase suggests Ectopic Pregnancy.
- **In 17% patients with Ectopic Pregnancy  $\beta$ HCG doubling time is normal.**
- Progesterone level<sup>5</sup>
  - o It has a poor diagnostic value
  - o  $>25$  ng /ml suggests normal IUP
  - o  $<5$  ng/ml suggests abortion.
  - o Ectopic Pregnancy can have range from 5 – 25 ng.
  - o Limitations include patients undergoing infertility treatment via IVF.

**Features seen on TVS (Transvaginal Ultrasound)<sup>5</sup>**

- Ectopic cardiac activity Diagnosis is 100 %
- Ectopic gestational. Sac strong evidence
- Ectopic mass & fluid in POD moderately strong evidence

**Colour Doppler<sup>5</sup>**



Ring of Fire sign seen around a Cold Uterus is diagnostic of ectopic gestation on color Doppler ultrasound.

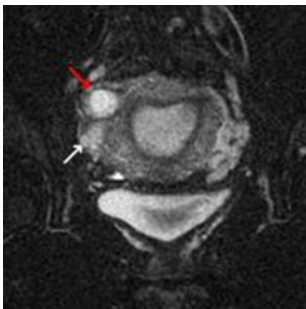
**Laparoscopy**

Laparoscopy is rarely required for diagnosis. Findings of laparoscopy may be normal in very early stages of ectopic pregnancy. The advantage is that a diagnostic scopy can be easily be converted to therapeutic scopy and treatment of ectopic gestation can be done simultaneously.

**Uterine Curettage<sup>5</sup>**

Curettage is usually among the least used diagnostic modalities for ectopic pregnancy. It can help to differentiate from nonviable intrauterine pregnancy. The confirmatory finding for IUP is the presence of chorionic villi in normal saline.

**MRI**



For academic purposes, MRI scanning can be used to get an accurate diagnostic imaging for ectopic pregnancy. The MRI of choice is coronal section of T2-weighted fat-saturated MRI of the pelvis which clearly depicts the ectopic gestational sac with its exact location within the pelvic adnexa.

**Medical Management<sup>6</sup>**

**Selection Criteria:**

- Mass  $< 3.5$  cm
- $\beta$ HCG  $< 4000$  mIU /ml,
- $< 6$  weeks gestational age
- Absent cardiac activity.

- No hemoperitoneum.
- Hemodynamically stable patient
- Patient must be compliant & well counselled

**Methotrexate Regimen:**

- **Single Dose** - 50 mg/m<sup>2</sup> IM
- $\beta$ HCG on day 4 & day 7.
- It should decrease by 15 % of the initial level.
- If it persists on day 7, repeat the dose (max. 4 doses).
- If it decreases do weekly bHCG till Ectopic Pregnancy resolves ( $< 10$  mIU)

**Methods**

A study of 50 cases of tubal ectopic pregnancy was carried out from May 2009 to June 2011 in tertiary health centre.

Patients managed with following treatment modalities were selected for study.

(1) Medical management (MTX)

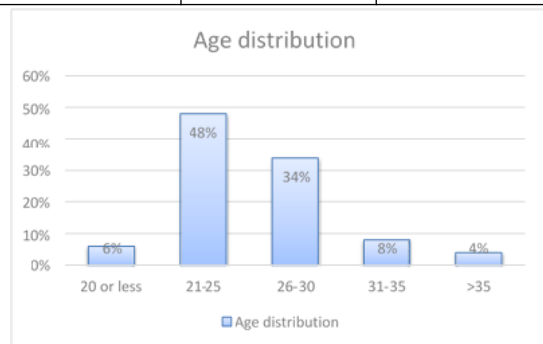
(2) Laparoscopic management: Salpingostomy  
Salpingectomy

(3) Laparotomy management: Salpingostomy  
Segmental resection  
Fimbrial expression  
Salpingectomy

**RESULTS**

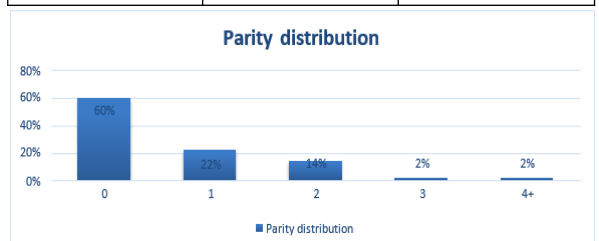
**Table -1 Age Wise Distribution**

Age (years)	No of patients	Percentage (%)
20 or less	3	6%
21-25	24	48%
26-30	17	34%
31-35	4	8%
>35	2	4%



**Table 2 Parity Distribution**

Parity	Number	Percentage
0	30	60%
1	11	22%
2	07	14%
3	01	02%
4	01	02%



As per study, 60% patients were nullipara and 82% were primipara or nullipara. This suggest that low parity has high chances of ectopic pregnancy.

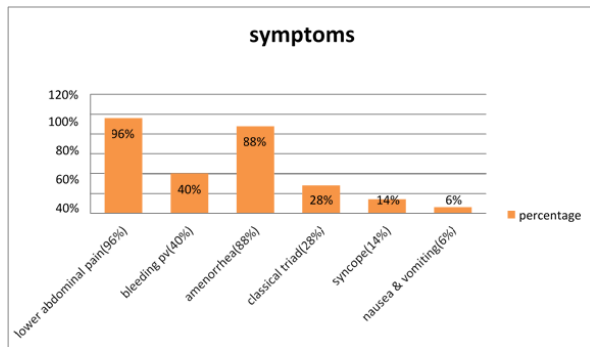
**Table-3 Symptoms**

Symptoms	Number	Percentage	Gharono et al(2002)
Lower abdominal pain	48	96%	83.6%
Bleeding per vagina	20	40%	73%
Amenorrhea	44	88%	77.6%
Classical triad	14	28%	-
Syncope	07	14%	25.7%
Nausea & vomiting	3	6%	16.5%

Lower abdominal pain was most common presenting symptoms in 96% cases. 88% cases had amenorrhea as the presenting symptom.

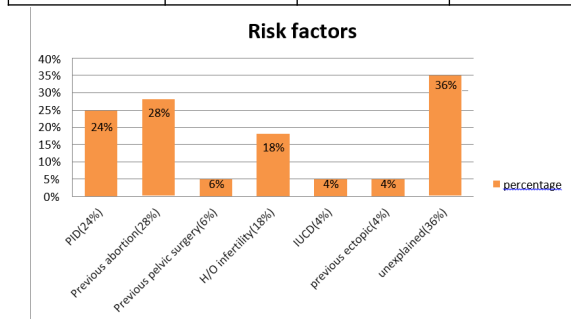
Classical triad of symptoms (amenorrhea, abdominal pain and vaginal bleeding) was present in only 28% cases.

Syncope was experienced by 14% patients, which was due to significant intraperitoneal hemorrhage.



**Table-4 Risk Factors**

RISK FACTOR	NUMBER	PERCENTAGE	GHARORO ET AL(2002)
PID	12	24%	41%
PREVIOUS ABORTION	14	28%	63%
PREVIOUS PELVIC SURGERY	03	06%	2.6%
H/O INFERTILITY	09	18%	2%
IUCD	02	04%	-
PREVIOUS ECTOPIC	02	04%	2%
UNEXPLAINED	18	36%	-

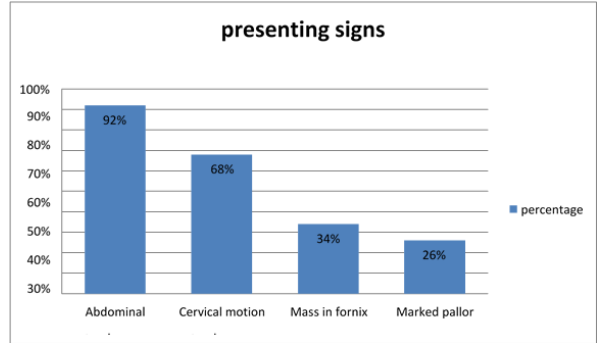


PID contributed 24% cases and previous abortion contributed 28% cases indicating these two as the common risk factors. Infertility was also a contributory factor in 18% cases.

**Table-5 Presenting Signs**

SIGNS	NUMBER	PERCENTAGE
Abdominal tenderness	46	92%

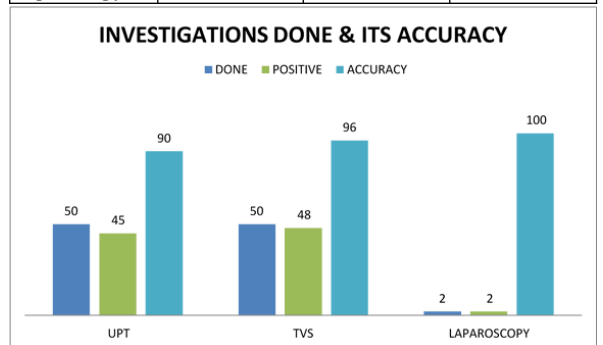
Cervical motion tenderness	34	68%
Mass in fornix	17	34%
Marked pallor	13	26%



Abdominal Tenderness was present in 92% cases and cervical motion tenderness was present in 68% cases.

**Table-6 Investigations**

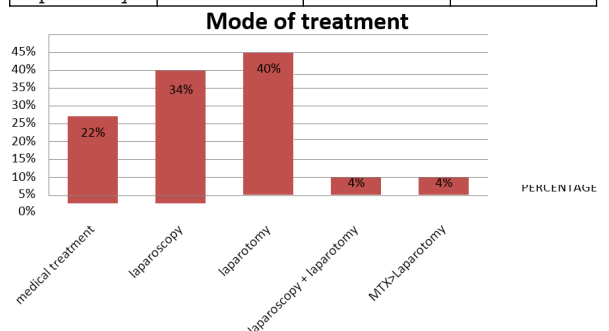
Investigation	Done	Positive	Accuracy
UPT	50	45	90%
TVS	50	48	96%
Laparoscopy	02	02	100%



- UPT was done in all cases, positive in 45 cases.
- TVS done in all cases, of which 96% cases showed positive results.
- In 2 cases in which UPT & TVS are negative, Laparoscopy done which shows 100% conclusive information.

**Table-7 Mode Of Treatment**

Mode of treatment	Number	Percentage	Caminiti et al (2006)
Medical treatment	11	22%	21%
Laparoscopy	17	34%	26%
Laparotomy	20	40%	28%
Laparoscopy + Laparotomy	02	04%	25%
MTX > Laparotomy	02	04%	-



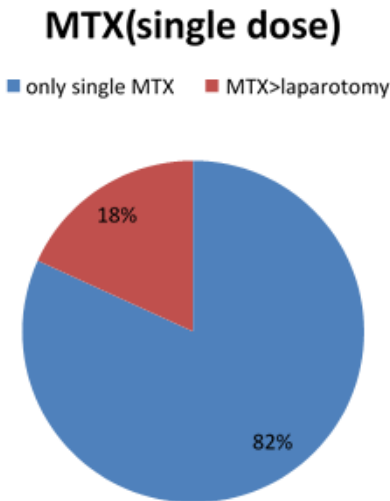
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pregnancy and ectopic mass < 4 cm.

- Laparoscopy was done in 34% cases, in 2 cases it was converted to laparotomy.
- Laprotomy was done in 40% cases.

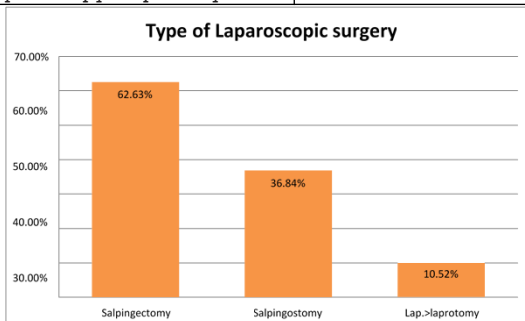
**Table - 8 Success Rate -methotrexate (MTX)**

In 82% cases single dose Methotrexate was successful.



**Table-9 Type of surgery (laparoscopic)**

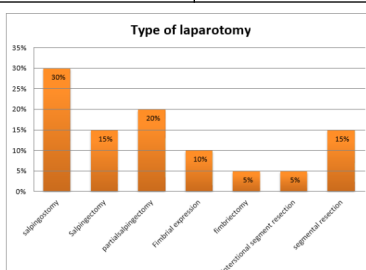
Type of laparoscopic surgery	Percentage
Salpingectomy	62.63%
Salpostomy	36.84%
Laparoscopy > laprotomy	10.52%



Above chart suggests that in 63% cases salpingectomy was preferred. While in 36% cases salpingostomy was done.

**Table 10- Type Of Laparotomy**

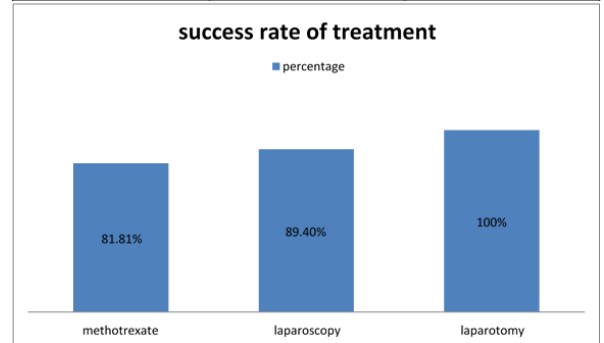
Type of laparotomy	Percentage
Salpingostomy	30%
salpingectomy	15%
Partial salpingectomy	20%
Fimbrial expression	10%
fimbriectomy	5%
interstitial segment resection	5%
segmental resection	15%



Above data shows that in laparotomy, 30% patients had salpingostomy, while 20 % patients underwent partial salpingectomy.

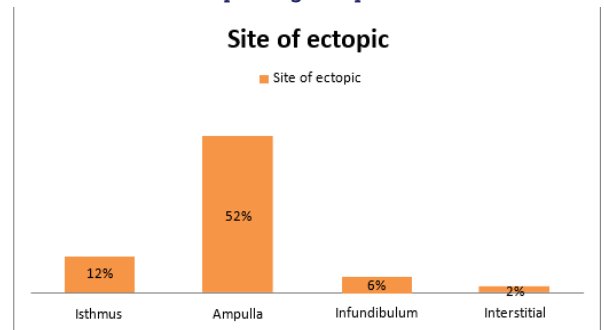
**Table 11.Success Rate of Treatment**

TREATMENT	SUCCESS RATE	Sraj et al.
Methotrexate	81.81%	94.70%
Laparoscopy	89.40%	91.40%
Laparotomy	100%	-



- Success rate 81.81% for medical management by methotrexate
- Laparoscopic management has a success rate of 89.4%.

**Table 12 – Site Of Ectopic Pregnancy**



- Ampulla was the commonest site for ectopic pregnancy, in 52% cases. Salpingostomy performed mainly at this site.
- In 6% cases ectopic pregnancy in infundibulum were treated with fimbrial expression and fimbriectomy.

**Laparotomy vs laparoscopy**

Complication	Laparotomy	Laparoscopy
Morbidity	More	Less
Postoperative adhesions	More	Less
Risk of future ectopic	More	Less
Future fertility	Same	Same
Persistent ectopic	Less!	More
Experience / instruments	Routine	Special

Cochrane database review 2007

**Salpingectomy Vs Salpingostomy ?**

- Salpingectomy partial or total is only indicated when there is uncontrollable bleeding or future childbearing is not desired.
- Risk of recurrent ectopic & infertility are same.
- Persistent trophoblastic activity is slightly more in salpingostomy

**DISCUSSION**

Ectopic pregnancy is a treatable problem. Ultrasonography plays central role in the diagnosis and management.

Mode of therapy is determined by a combination of clinical symptoms, ultrasound findings and serum b-HCG values.

Surgical management is still a cornerstone of management of ectopic pregnancy, but now scope of medical and laparoscopic management is also there.

In recent years laparotomy has been replaced by laparoscopic surgery which is more conservative, minimally invasive and less time consuming which leads to quick recovery.

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