



## **Delayed management of ruptured ectopic pregnancy: an observation of concern**

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### **ABSTRACT**

There were 82 cases of ruptured ectopic pregnancies during a 6-year period, (2049-2054) April 1992-1998. Associated high risk factors were proven PID (3), infertility (10), sterilization (4), previous ectopic (6), IUCD (1). One of the cases had clomiphene citrate and the other was an OCP for cystic ovary. Atypical presentations were melaena (2) and intestinal obstruction (1). Symptoms and admission interval varied from 1 hour to more than a month in 8 cases. Surgical intervention was undertaken at an earliest in 2 hours and delayed beyond 1-2 weeks in 7 cases. Surgical management was delayed beyond 6 hours (69.5%) and 12 hours (56%) respectively. This delay was mainly due to misdiagnosis (45%) as the symptoms of PID (3), DUB (1), and pelvic abscess (1) overlapped with ectopic. Improper and inadequate referral due to inexperienced opinion at admission was another cause for delay.

Forty-two point six percent had significant haemoperitoneum, of which 39.4% needed blood transfusion. Two cases had tubal reconstruction and two underwent hysterectomy.

We emphasize to overcome the diagnostic dilemma by adopting sensitive BhCG using monoclonal antibodies, TVS and laparoscopy whenever necessary along with active surgical team to cut short the delay in operative management of ruptured ectopic.

*Keywords: Ruptured ectopic; Risk factor; Delayed management.*

### **INTRODUCTION**

Recently, diagnosis of ectopic pregnancy can be made substantially with the latest development of immunoassays utilizing

monoclonal antibodies to  $\beta$  human chorionic gonadotrophin and high resolution ultrasound scanners before significant haemorrhage occurs. The diagnostic facility for early

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diagnosis coupled with the development of surgical equipment has led to new ways of treating ectopic pregnancy. Today with early diagnosis of ectopic pregnancy, there is possible benefit of expectant medical therapy or conservative surgery.

The clinical features of ectopic pregnancy overlap with those of other gynaecological conditions as threatened, incomplete abortion and PID. Hence, only half of the patients with ectopic pregnancy will be correctly diagnosed as having the condition based on clinical feature.

In the acute cases or emergency group, evidence of haemoperitoneum associated with clinical shock (pallor and fainting) hypotension, tachycardia due to intraperitoneal haemorrhage makes the diagnosis easy for quick surgical intervention.

Arriving at the conclusive diagnosis may not be so simple since less than 20% women fall in silent asymptomatic group and have localised tenderness in one of the fornices that may have remained dormant for sometime, occasionally being treated as PID.

Pain, amenorrhoea and bleeding, the triad of ectopic is seldom present in 50% of the cases. In the subacute cases, some degree of pain of variable severity may pass off barely noticed with remaining shoulder tip pain and pain in defaecation. Whenever the rupture or tubal abortions occur gradually, the symptoms maybe less dramatic and the true diagnosis is often masked. The prospect of early treatment is dependent on maintaining a high index of suspicion and developing and using additional diagnostic tests available, whenever the diagnosis cannot be made with confidence, though the risk factor assessment

[previously proven PID, previous ectopic, sterilization, two or more induced abortion, infertility] and physical examinations are the initial work up in all cases of suspected ectopic.

Although the incidence of ectopic pregnancy has increased four fold, the risk of death has declined to 85% due to improved diagnostic technology and better management. However, avoidable factors still exists to investigate fully or to the errors in treatment of bleeding, so careful clinical management is of paramount importance.<sup>1</sup>

### **The study**

Ruptured ectopic pregnancy was analysed for 6 years from 2049-2054 in the Teaching Hospital; retrospective data for the first 3 years were collected from the emergency unit, operation theatre record and female surgical wards. The prospective study which began 3 years back also consisted of detailed interview with patients, diagnostic approach and management.

### **Analysis**

In this article we would like to specially focus on surgical delay beyond 6-12 hours and the lacunae behind.

The management starts from the emergency unit. It has often been noticed that the patients are kept in emergency for observation for a pretty long period and referred in the middle of night or early morning hours, elsewise they are admitted in surgical or medical ward with inadequate referral. Still for the worse outcome, the patient is discharged without complete work up to be readmitted again with alarming haemoperitoneum.

When to suspect ruptured ectopic ? Inability to recognise the scenario pin points to diagnostic dilemma. Few but appreciable mistakes from our side had been discharging patient with antispasmodic (1), recent D&C (2), being treated as PID (3), pelvic abscess (1), DUB (1), and unpardonable deliberate postponement of chronic ectopic (3).

Another important observation is inadequate referral. One of the cases collapsed while being referred from a ward to OPD as she had massive haemoperitoneum. Unavailability of ultrasound facility were in few cases (2) while more than 14 cases offered inconclusive irrelevant diagnosis.

**Table I**

<i>Delay Year</i>	<i>Total number</i>	<i>≥ 6 h</i>	<i>≥ 12</i>
049	9	3	3
050	10	10	9
051	13	13	12
052	13	10	5
053	25	11	11
054	12	10	6
	82	57 (69.5%)	46 (56%)

**Table II**

<i>Symptom to admission interval</i>	
Within 12h	11
12h - 24h	10
24h - 48h	7
48h - 72h	4
3D - 1 week	12
≥ 1 week - 2 week	18
≥ 2	13
≥ 4 week	7

**Table III**

<i>Surgical intervention</i>	
Within 6 hrs	25 (30.4%)
6-12 h	11 (13.4%)
≥ 12-24 h	23
≥ 24-48 h	9
≥ 48-72 h	4
3D-1 week	3
≥ 1 week-2 week	3
≥ 2 week	4

**Table IV**

<i>Reasons for surgical delay</i>	
Inadequate referral	8
Admission to different wards	6
Orthopaedic	1
Surgery	3
Medicine	2
Inexpert opinion	8
Abortion	1
Returned & antispasmodic	1
DUB	1
PID	3
Pelvic abscess	1
Threatened abortion	1
Mislead by ultrasound	14
TOM	5
Pelvic abscess	3
Solid ovarian tumour	1
Ovarian Cyst+Chocolatecyst	1
Missed Abortion	1
Twisted ovarian cyst	1
DUB	1
Dermoid cyst	1
Delayed USG	2
Deliberate postponement of chronic ectopic	3
Awaiting for anaesthetist	2
Awaiting for blood	2
Patient did not give consent	1

Methotrexate therapy	1	
<i>Clinical presentation</i>		
	<i>no</i>	<i>%</i>
Pain+amenorrhoea	27	33.9
Pain+bleeding	13	15.8
Pain+bleeding and amenorrhoea	25	30
Pain	15	18.2
Shock	11	13.4
Syncope	12	14
Melaena	2	2.4
Intestinal obstruction	1	1.2
h/o D&C	3	3.6
<u>Risk Factor</u>		
Previous proven PID	3	
Tubal sterilization	4	
Previous ectopic	6	
Primary infertility	7	
Cu T (IUCD)	1	
Secondary infertility	3	
	24	(29.2%)
<u>Clinical Finding</u>		
Abdominal tenderness	40	(48.7%)
Abdominal mass	17	(20.7)
Cervical motion pain	15	(18.2%)
Fever	5	(6%)

	<i>no</i>	<i>%</i>
Anaemia	37	45.12
	<u>Hb (gm%)</u>	
≥ 6	6-8	8-10
5 (6%)	32 (39%)	25 (30%)

	<u>Blood Transfusion</u>	
≥ 2 Unit	3-4	
30 (36%)	13 (13.4%)	49.4%

**Operative findings**

				Total
haemoperitoneum	≤ 500	500-1.5L	≥ 1.5L	
	11	14	10	35 (42.6%)

Organized ectopic

Pelvic haematocoele	7
TOM	10 17 (21%)

Tubal

abortion	ampulla	isthmus	fimbrial	cornual	
21	25	7	5	4	62 (75%)

? Ovarian 2 (2.4%)

Sec abdominal 1 (1.2%)

Heterotopic preg (1)

<i>Management</i>		
	<i>no</i>	<i>%</i>
Unilateral salpingectomy	46	56
Bilateral salpingectomy	2	2.4
Unilateral salpingo oophorectomy	15	18.2
Unilateral salpingo oophorectomy with tubal ligation	14	17
Bilateral salpingectomy with unilateral oophorectomy	1	1.2
Tubal reconstruction		
(a) isthmus 1		
(b) cornual 1	2	2.4
Total abdominal hysterectomy:		
with unilateral salpingo-oophorectomy (1)		
with bilateral oophorectomy 1	2	2.4

## DISCUSSION

Many a times we have been called at odd hours at night or on weekends to operate upon neglected ruptured ectopic of long standing duration the patient remained admitted in our care for substantial period and the reason of this delay when asked would be solution within our reach (eg non availability of blood, anaesthetist, vehicle etc). Sometimes a ruptured ectopic would be deliberately left behind making the diagnosis of chronic, stable organised ectopic to be rewarded with astonishingly significant haemoperitoneum. With clinical presentation of pain (97.9%), abdominal tenderness (48.7%), (45%) haemoperitoneum (42.6%), lump abdomen (20.7%) and cervical motion pain (18.2%), along with associated risk factor (29%) surgical delay beyond 6 hrs (67%) and 12 hrs (56%) is remarkably concerning which were mainly due to diagnostic difficulties (45%).

Two important advances in the diagnosis of ectopic pregnancy are high resolution vaginal ultrasound and quantitative sensitive BhCG assay. After 33-34 days of missed period or 1 week of due menses, use of TVS permits consistent visualisation of gestational sac at hCG level of 1000 iu/l<sup>2</sup> otherwise a diagnosis of ectopic should be suspected and TVS repeated in 4 days. (Positive predictive value of 98%) Rising hCG level >2000 mIU combined with endovaginal and abdominal sonography which shows absence of intrauterine gestation sac

and presence of adnexal cardiac activity tubal ring or adnexal mass 1 to 3.5-4 cm with free blood in peritoneal cavity will assist the physician in making an early diagnosis of ectopic pregnancy. The last decade has seen the introduction of serial quantitative BhCG estimation and paired serum sample at 48 h apart might be informative provided we can allow such a long wait, a time for ectopic to rupture, serial BhCG will be seen to decline by 15% in 12-24 h in non viable pregnancy whereas it continues to rise or plateaus (doubling time of  $\geq 7$  days) in ectopic pregnancy. If BhCG rise is <66% equivalent to doubling time of 2.7 days [13% ectopic have  $\geq 66\%$  rise and 15% normal pregnancy have <66% rise] then laparoscopy is to be performed in clinically stable suspected cases where TVS has been unhelpful. The corollary is that in 94% of normal pregnancy, intrauterine gestational sac is visible when hCG level is  $\geq 6500$  iu/l.<sup>3</sup>

If the diagnosis can be achieved without laparoscopy, the patient is additionally benefited both from surgical and anaesthetic risk so that medical therapy can be offered as a treatment option.

In randomised clinical trial, Stoval TG (1992) was able to make 100% diagnosis of ectopic pregnancy using history, risk assessment, clinical presentation, TVS, serial hCG and serum progesterone and D&C without laparoscopy.<sup>4</sup>

Laparoscopy still remains the final diagnosis though the newer diagnostic methods have reduced its use as the delay in

diagnosis fell from 32% to 5% using laparoscopy.<sup>5</sup> 3-4% error may occur due to very early pregnancy or severe pelvic adhesion which obscure the tubes.

In the process to enable the surgical team in diagnostic accuracy and facilitate in speedy management, we apologise making healthy and honest criticism with the hope to overcome surgical delay.

### CONCLUSION

Application of risk factor assessment, use of rapid and simple test based on enzyme labelled monoclonal antibodies or immunofluorometric assay capable of qualitatively and quantitatively detecting low level of BhCG, transvaginal ultrasound and laparoscopy are cornerstone in diagnosing the ectopic pregnancy, while quick, decisive, well communicative, co-ordinated and organised surgical teams remain the final answer to remedy the surgical delay.

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