

# Tubal ectopic pregnancy in the north of Jordan: presentation and management

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## Summary

**Objective:** To evaluate and compare the current approach to the management of ectopic pregnancy between the main two civil hospitals in the north of Jordan. **Design:** A retrospective study. **Material and methods:** A retrospective review was made of the records of all patients with confirmed ectopic pregnancy admitted to Princess Badea Teaching Hospital (PBTH), and King Abdullah University Hospital (KAUH) between January 1, 2005 and December 31, 2005. The total number of deliveries for the same period was obtained from the labor ward records of hospitals. Information regarding demographic data, presenting symptoms, methods of diagnosis and treatment were extracted from individual patient records. **Results:** There were 50 cases of confirmed ectopic pregnancy in PBTH compared with 20 cases in KAUH. The total number of deliveries at PBTH was 9,000 (1 ectopic/180 deliveries) while at KAUH, the number of deliveries was 3,000 so the ratio was 1: 150. The majority of patients (82%) had ruptured ectopic pregnancy at presentation. All cases at PBTH were managed by laparotomy. Of the 20 cases at KAUH, five cases were managed laparoscopically and three received medical treatment for their ectopics. There was no maternal mortality from ectopic pregnancy or its management at either hospital. **Conclusion:** The management of ectopic pregnancy in our community is still sub-optimal. We recommend the development of clinical protocols for early diagnosis and referral, training in transvaginal scanning and an increase in the use of laparoscopy for the management of ectopic pregnancy.

**Key words:** Ectopic pregnancy; Methotrexate; Laparoscopy.

## Introduction

Ectopic pregnancy remains an important cause of maternal morbidity and occasionally mortality [1]. The management of ectopic pregnancy has changed considerably over the last few years. The availability of rapid and sensitive tests for  $\beta$ -hCG, improved transvaginal ultrasound (TVS) techniques and development of clinical protocols for diagnosis and treatment have made early and non-invasive diagnosis of ectopic pregnancy possible, and allowed medical therapy of this condition [1-4]. Furthermore, advances in laparoscopic surgery would theoretically allow most ectopic pregnancies to be managed laparoscopically under ideal situations.

Unfortunately, advances in the management of this condition are not available or practical everywhere. Late presentation with massive hemoperitoneum is not uncommon in developing countries, which limits both the use of conservative treatment and contributes to high maternal morbidity and mortality [5].

The aim of this study was to evaluate the current approach to the management of ectopic pregnancy in the main two civil hospitals in north of Jordan.

## Material and Methods

A retrospective review was made of the records of all patients with confirmed ectopic pregnancy admitted to Princess Badea Teaching Hospital and King Abdullah University Hospital

(KAUH) between January 1, 2005 and December 31, 2005. The total number of deliveries for the same period was obtained from labor ward records.

Information regarding demographic data, presenting symptoms, methods of diagnosis and treatment were extracted from individual patient records.

## Results

During the study period, there were 50 cases of confirmed tubal ectopic pregnancies at PBTH and 20 cases at KAUH. The total number of hospital deliveries was 9,000 at PBTH and 3,000 at KAUH. The ratio of tubal ectopic pregnancy to total hospital delivery was 1:180 at PBTH and 1:150 at KAUH.

The average age of patients was 28.8 years (range 16-40) at PBTH, and 31.7 years (range 23-40) at KAUH. The highest incidence of ectopic pregnancy occurred in multiparous women at both hospitals (Table 1).

Eight patients (16%) from the PBTH group and two (10%) from the KAUH group used intrauterine contraceptive devices, while the majority of patients from both PBTH and KAUH did not use any form of medical contraception (74% and 85%, respectively). Three patients (6%) with tubal ectopic pregnancy from the PBTH group had conceived by IVF while one patient (5%) from the KAUH group conceived by IVF. Twenty patients (40%) from PBTH and nine patients (45%) from KAUH had a previous history of uterine evacuation for retained products of conception. However, only one patient (2%) from PBTH and one patient (5%) from KAUH had a previous history of documented pelvic inflammatory disease.

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Table 1. — Patient characteristics.

	PBTH*		KAUH**	
	n	%	n	%
Age				
16-25	15	30	3	15
26-35	27	54	11	55
≥ 36	8	16	6	30
Parity				
0	6	12	11	55
1-4	35	70	8	40
> 4	9	18	1	5
Contraception				
– Combined pills	1	2	0	0
– Minipills	4	8	1	5
– IUCDs ***	8	16	2	10
– None user	37	74	17	85
Risk factors				
– Pelvic inflammatory disease	1	2	1	5
– IVF	3	6	1	5
– Previous ectopic	2	4	0	0
– Previous pelvic operation	10	20	2	10
– Previous evacuation of retained products of conception	20	40	9	45

\* PBTH: Princess Badea Teaching Hospital; \*\* KAUH: King Abdullah University Hospital; \*\*\* IUCD: Intrauterine contraceptive device.

Table 2. — Clinical findings of ectopic pregnancy at PBTH and KAUH.

	PBTH*		KAUH**	
	n	%	n	%
Symptoms:				
– Amenorrhoea	30	60	15	75
– Abdominal pain	47	94	17	85
– Vaginal bleeding	36	72	12	60
– Syncope	3	6	1	5
– Shoulder pain	4	8	1	5
Signs:				
– Abdominal tenderness	45	90	15	75
– Cervical excitation	35	70	*	*
– Adnexal mass	7	14	4	20
Ultrasound findings:				
– Extrauterine sac or alive fetus	2	4	0	0
– Fluid in the pouch of Douglas	22	44	7	35
– Adnexal mass	17	34	6	30
– Empty uterus	6	12	7	35
– Not done	3	6	0	0
Use of laparoscopy:				
– Used	18	36	12	60
– Not used	32	64	5	25
– No surgery	0	0	3	6
State of the tube:				
– Ruptured	41	82	6	30
– Unruptured	9	18	11	55
– Not assessed	0	0	3	15

\* PBTH: Princess Badea Teaching Hospital; \*\* KAUH: King Abdullah University Hospital.

Abdominal pain was by far the most common presenting symptom (94% for PBTH, 85% for KAUH), followed by an episode of vaginal bleeding (Table 2). Amenorrhoea was noted in 60% of the PBTH cases and in 73% of the KAUH cases. Abdominal tenderness was elicited in 90% of the PBTH patients and in 75% of KAUH patients,

Table 3. — Outcome of medical intervention for ectopic pregnancy at PBTH and KAUH.

	PBTH*		KAUH**	
	n	%	n	%
Treatment:				
– Rt salpingectomy	30	60	8	40
– Lt salpingectomy	18	36	6	30
– Salpingotomy	2	4	3	15
– Laparoscopic surgery	0	0	5	25
– Medical	0	0	3	15
Blood transfusion:				
– None	33	66	17	85
– 1 litre	10	20	3	15
– > 1 litres	7	14	0	0
Hospital stay (days):				
– 1-2	12	24	8	40
– 3-4	18	36	8	40
– 5-6	8	16	2	10
– > 6	2	4	2	10

\* PBTH: Princess Badea Teaching Hospital; \*\* KAUH: King Abdullah University Hospital.

while an adnexal mass was palpable in seven cases (14%) of PBTH and four (20%) of KAUH cases.

Transabdominal ultrasound was performed in 47 (94%) cases at PBTH, and in all cases at KAUH. The commonest sonographic finding was free fluid in the pouch of Douglas (44% for PBTH and 35% for KAUH), indicating a leaking or ruptured ectopic pregnancy. Ultrasound was not performed in three cases at PBTH because of the state of collapse and clinical picture of intraperitoneal bleeding.

All PBTH cases were managed by laparotomy. In 18 cases (36%), laparoscopy was implemented as a diagnostic tool. Nearly all patients underwent salpingectomy (60% right side, 36% left side). Only nine patients had an unruptured ectopic pregnancy at the time of surgery. However, at KAUH, medical treatment with methotrexate was used in three (15%) cases, laparoscopic surgery was performed in five (25%) cases, and the remaining (60%) had laparotomy.

Two-thirds of patients had their operation within 12 hours of admission. Only three patients had to wait 72 hours or more to undergo surgery (Table 3). Seventeen patients (34%) required intra- or postoperative blood transfusion to correct their anemia at PBTH compared to three patients (15%) at KAUH.

The average hospital stay was 3.5 days. Twenty-eight patients (56%) went home on the fourth postoperative day. There were no maternal mortalities from ectopic pregnancy during the period of study.

## Discussion

The rate of ectopic pregnancy varies worldwide. The annual incidence of ectopic pregnancy in the USA is around 2% [6]. In Norway, Sweden and UK, the rates more than doubled between the 1970s and the 1990s, but are now declining [7-10]. In Nigeria, the rate is increasing from 1:287 to 1:44 [11, 5]. In Saudi Arabia, Sobande

and Archibong reported an incidence of 0.74 per 100 live births [12].

The rate of ectopic pregnancy was 1:175 in the north of Jordan. This relatively low rate could be explained by the fact that termination of pregnancy and sexually transmitted diseases are uncommon in Jordan. The commonest risk factor found in our study was prior evacuation of the uterus for retained products of conception.

Laparoscopic management of ectopic pregnancy is generally preferred over laparotomy [13, 14], due to lower cost, blood loss and analgesia requirements and shorter postoperative recovery. In this study, however, conventional surgery with salpingectomy was the standard modality of ectopic pregnancy treatment at PBTH. This is explained by late presentation in most cases and lack of training for operative laparoscopy. For the same reasons, medical management of ectopic pregnancy was not implemented at PBTH. At KAUH, a quarter of cases were managed by laparoscopic surgery, 15% of cases were managed by medical treatment (methotrexate), and in only 60% of cases laparotomy was performed. This is due to the availability of trained gynecologists in the use of operative laparoscopy.

Maternal mortality from ectopic pregnancy fell from 35.5 to 3.8 deaths per 10,000 women between 1970 and 1989 in the USA [15], and from 16 to three deaths per 10,000 pregnancies between 1973 and 1993 in the UK [7]. In the developing world, however, mortality remains high [16]. There were no maternal deaths due to ectopic pregnancy during the period of our study. A high index of suspicion of ectopic pregnancy and short decision-intervention interval may explain this [17, 18].

In conclusion, the management of ectopic pregnancy in our community is still suboptimal. We recommend more development of clinical protocols for early diagnosis and referral, and training in transvaginal scanning. Moreover, with the new technological advances in laparoscopic surgery, it is recommended that training in this technology be implemented with the view of conducting less invasive and more conservative procedures.

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