

# Place of Autologous Intraoperative Blood Transfusion in the Treatment of Broken Ectopic Pregnancy (EP) at the Chiphra Hospital of Ouagadougou, Burkina Faso

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## Abstract

**Objective:** To describe the role of autologous regenerative intraoperative bleeding of recent intra-cavity losses over the ectopic pregnancy ruptured at the Schiphra Hospital of Ouagadougou. **Methodology:** It has been a cross-sectional descriptive study over a period of 18 months from January 1<sup>st</sup> 2014 to June 30<sup>th</sup> 2015 in the obstetrics and gynecology department at the schiphra hospital of Ouagadougou. In our study, we included all pregnant women having received emergency with a diagnosis of broken ectopic pregnancy complicated by a significant array of clinical haemoperitoneum and who have consented to participate in the survey. **Results:** During the study period, we recorded 322 cases of ectopic pregnancy, among which 106 were broken. Autotransfusion was performed in 59 patients, that is to say 18.3%. The average age of patients was 27 years (18 - 40). The average rate of childbirth was 5.25 (0 - 11). The general condition of the patients was pretty good at 8.5% and poor in 91.5% of cases. The average amount of blood transfused per patient was 935 ml with a range of 400 and 1600 ml. After autotransfusion, 62% of patients had greater improvement in hemoglobin 10 g/dl. Maternal prognosis was marked by a case of fever with a morbidity rate of 1.9% and a death post autotransfusion case fatality rate of 1.9%. **Conclusion:** In the context of shortage of blood products, autologous transfusion could be an alternative in the treatment of ruptured ectopic pregnancy in developing countries.

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## Keywords

Ectopic Pregnancy, Haemoperitoneum, Autotransfusion, Ouagadougou

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## 1. Introduction

In developing countries, the prevalence of anemia is very high. Among the etiologies of that, many authors cite nutritional causes, infectious causes, traumatic causes, gynecology obstetric causes including haemorrhage and ectopic pregnancy (EP) broken [1] [2]. In the same context, we are witnessing to a shortage of blood products posing the problem of the treatment of this disease [3].

In these circumstances, the technique of autotransfusion, which is to retrieve, for immediate transfusion, the blood poured into the abdominal cavity, appears as an alternative to traditional transfusion [4]. The department of gynecology and obstetrics at the Schiphra Hospital in Ouagadougou, imported technique of some hospitals in the sub region including Christian Hospital Tanguiéta in Benin.

The aim of our work is to describe the experience of the obstetrics and gynecology department of the Schiphra Hospital of Ouagadougou in Burkina Faso in the management of broken ectopic pregnancy by the use of this technique very advantageous.

## 2. Methodology

It has been a cross-sectional descriptive study over a period of 18 months from January 1<sup>st</sup> 2014 to June 30<sup>th</sup> 2015 in the department of obstetrics and gynecology at Ouagadougou Schiphra hospital. The team responsible for conducting the survey had first received practical training in Christian Hospital Tanguiéta in Benin. The training lasted one month included the identification of eligible blood autotransfusion, the technique of blood collection, handling equipment for autotransfusion and monitoring of the patient transfused. The population of study was constituted by the cases of broken ectopic pregnancy with autologous transfusion.

Inclusion criteria included:

- ✓ the theoretical lower gestational age was lower to 14 weeks of gestation
- ✓ the chart of clinical haemoperitoneum, of abundance
- ✓ the quality of the collected haemoperitoneum blood that is to say, well oxygenated, without clots and macroscopically normal
- ✓ informed consent of the patient

The exclusion criteria included:

- ✓ cases of homologous transfusion
- ✓ patients who refused to participate in the study
- ✓ macroscopic blood Appearance not acceptable and not much interesting

The variables studied included age, occupation, marital status, geographical

origin, gynecological history, clinical and para clinical at the admission and the departure of the patient. Data were collected from two structured questionnaires and were entered and analyzed using EPI-Info and MS-Excel.

We considered paucipara, patients with few previous deliveries birth to 3 times, multiparas those having between 4 and 6 births and high parity those with the number of delivery greater than or equal to 7.

The assessment of the overall condition was performed at the admission taking into account the hemodynamic status. The general condition was considered good when:

- blood pressure was greater than or equal to 120/80 mmHg
- pulse including 70 to 80 beats/minute
- hemoglobin level at admission higher than 10 g/dl

The general condition was considered bad when:

- blood pressure was less than or equal to 80/60 mmHg
- pulse rate greater than 100 beats/minute
- hemoglobin rate at admission lower to 6 g/dl

Patients with intermediate hemodynamic status to these two clinical situations were considered to have a fair condition.

### 3. Results

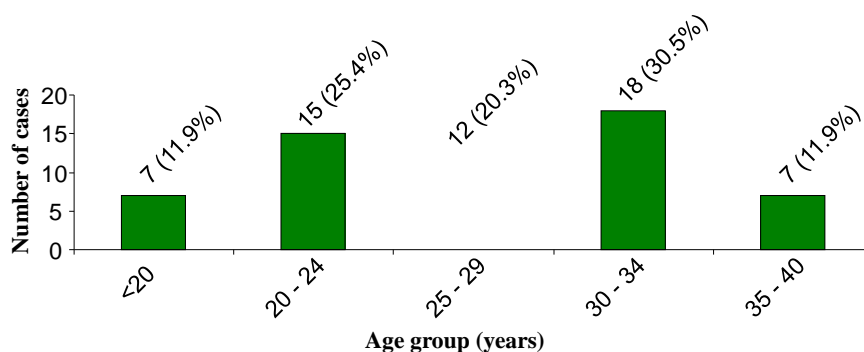
#### 3.1. Frequency

From 1<sup>st</sup> January 2014 to 30 June 2015, we recorded 322 cases of ectopic pregnancy including 216 cases of unbroken ectopic pregnancy and 106 cases of ectopic pregnancy broken including 59 cases that met our inclusion criteria. The broken ectopic pregnancy accounted for 32.9% of all the EP and auto transfusion rate was 55.7%.

#### 3.2. Socio-Demographic Characteristics

##### 3.2.1. Ages

The average age was 27 years with extremes of 18 and 40 years. **Figure 1** indicates the distribution of patients according to their age group. Thirty-four patients (57.6%) were under 30 years.



**Figure 1.** Distribution of patients according to the age group (n = 59).

### 3.2.2. Occupation

Figure 2 gives the distribution of patients according to their profession. Housewives are the foreground with 39%. The other group consisted of pupils and students.

### 3.2.3. Marital Status

Figure 3 shows the distribution of patients by marital status. Married women were the majority with 34%.

### 3.2.4. Number of Childbirth

The childbirth ranged from zero to eleven with an average childbirth of 5.25.

Table 1 shows the distribution of our patients according to their past childbirth. Forty one (69.3%) patients had number of childbirth more than 4.

### 3.2.5. Provenance

In total, 47 (80%) patients were from Ouagadougou and 12 patients (20%) were referred from neighboring provinces.

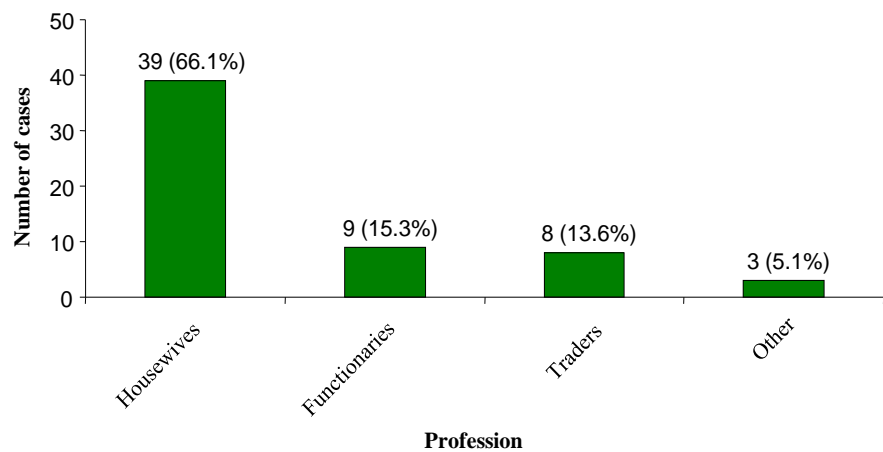


Figure 2. Distribution of patients according to the professional activity (n = 59).

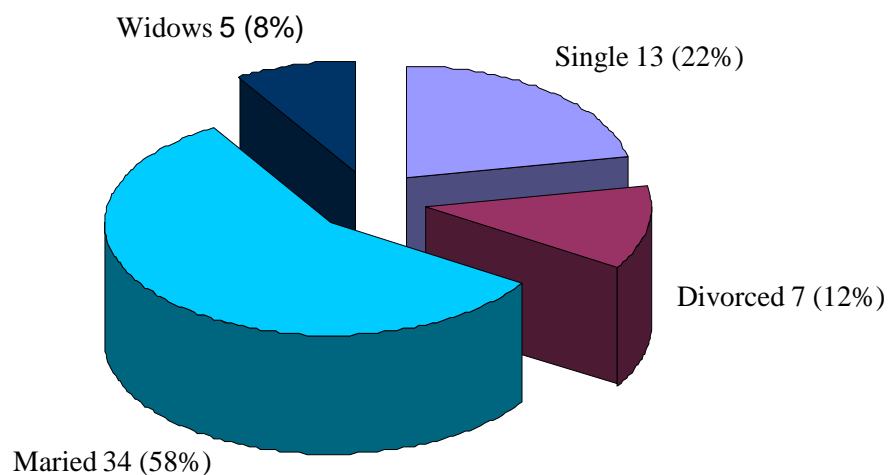


Figure 3. Distribution of patients according to the marital status (n = 59).

**Table 1.** Distribution of the patients according to the number of past childbirth (n = 59).

Number of past childbirth	Number of patients	Percentage
0	4	6.8%
1	8	13.6%
2 - 4	6	10.2%
5 - 6	18	30.6%
7 and more	23	38.8%
<b>Total</b>	59	100%

### 3.3. Clinical and Laboratory Aspects

#### 3.3.1. Admission Pattern

**Table 2** shows the distribution of patients according to the pattern of admission. The triad of pelvic pain, amenorrhea, and metrorrhagia (bleeding) was absent in 49 cases (81.9%).

#### 3.3.2. General State on Arrival

The results of the assessment are shown in **Figure 4**. Only 8.5% of patients had a good condition at the entrance.

#### 3.3.3. Seat of the EP

**Figure 5** shows the distribution of patients according to the seat of EP broken. In eighteen cases (31.4%) the seat of the EP was another but not isthmique.

### 3.4. Evolution of Hemoglobin

**Figure 6** shows the distribution of patients per hemoglobin.

### 3.5. Quantity of Self-Blood Transfused

**Table 3** shows the amount of self-blood transfused.

### 3.6. Improved Hemoglobin

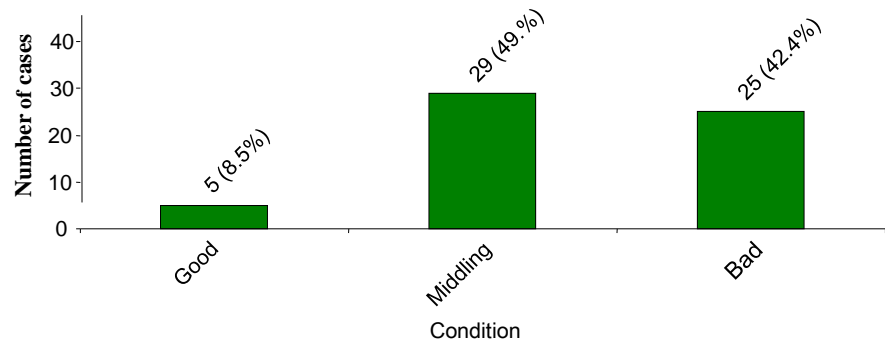
**Figure 7** shows the improvement rate of hemoglobin. Thirty six (62.0%) patients had an improvement in hemoglobin of greater than 74%.

### 3.7. Hospital Stay

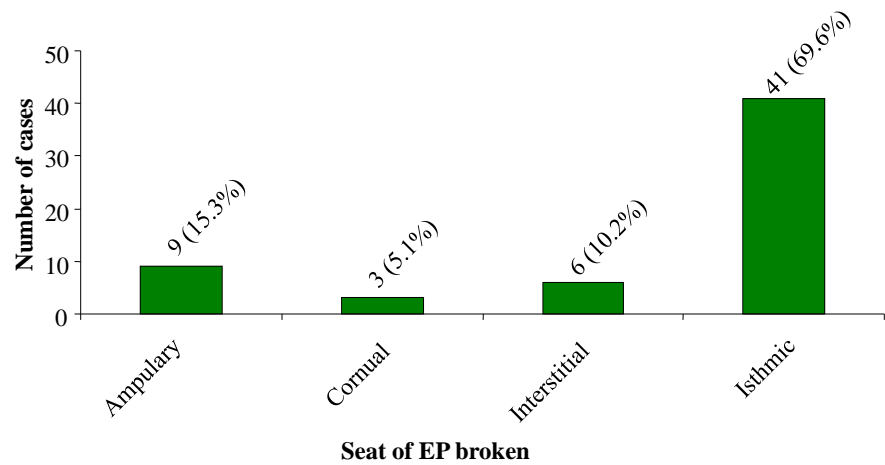
**Figure 8** shows the distribution of patients according to length of stay. The duration of hospitalization was less than 10 days in 95% of patients. **Table 4** shows the distribution of patients according to length of stay per site.

### 3.8. Complications

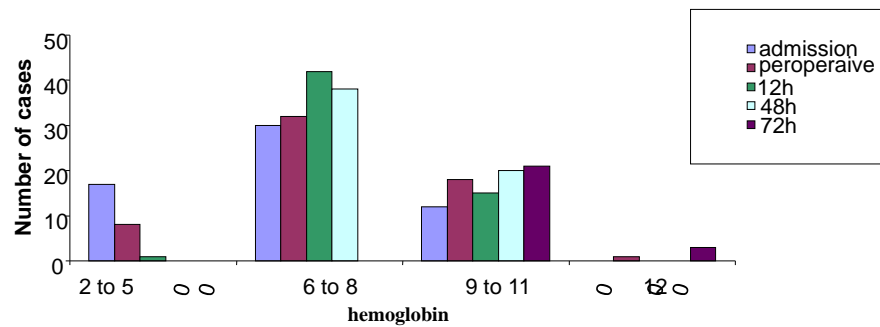
Maternal prognosis was marked by a case of fever or a morbidity rate of 1.9% and a post autotransfusion death case with a fatality rate of 1.9%, cases of death due to a hemorrhagic shock. We have not observed cases of jaundice or hemoglobinuria.



**Figure 4.** Distribution of patients according to their condition at admission (n = 59).



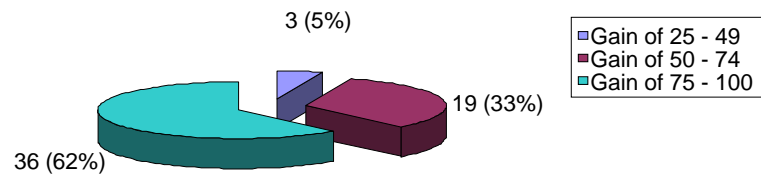
**Figure 5.** Distribution of patients according to the seat of broken ectopic pregnancy (n = 59).



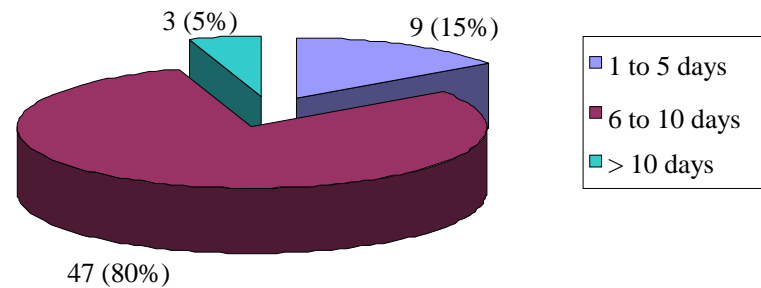
**Figure 6.** Distribution of patients according to the hemoglobin slices (n = 59).

**Table 2.** Distribution of patients according to the reason for admission (n = 59).

Reason for admission	Number	Percentage
Pelvic Pain-amenorrhea	35	58.4%
Pelvic pain-amenorrhea-metrorrhagia	10	16.9%
Pelvic pain-metrorrhagia	14	23.5%
Total	59	100%



**Figure 7.** Distribution of patients according to the hemoglobin improvement rates (n = 59).



**Figure 8.** Distribution of auto transfused patients according to hospital stay (n = 59).

**Table 3.** Quantity of transfused blood (n = 59).

Quantity of transfused blood (ml)	Number of patients	Percentage (%)
0 - 500	12	20.3
600 - 1000	28	47.4
1100 - 1500	16	27.0
1600 - 2000	03	5.0
Total	59	100

**Table 4.** Distribution of patients according to the hospitalization stay.

Stay (days)	Number	Percentage (%)
1 - 5	9	15
6 - 10	47	80
>10	3	5

## 4. Discussion

### 4.1. Epidemiological Aspects

#### • Frequency

In our series, the frequency of autologous transfusion was 55.7%. Our results are lower than those of Obiechina [1] in Nigeria who reported an autotransfusion rate of 96.8%. They are higher than those of Jongen VH [5] in Tanzania, who found a frequency of 43.3% in five years of practice. The low rate in our study could be explained in part by our flexible inclusion criteria and secondly by the fact that the practice was still at an early stage in the context of Burkina Faso. The great period in the study in Tanzania could actually hide confounders. Stratified analysis by shorter periods may reveal a contrary result [6].

- **Age of patients**

The average age in our study was 27 years, ranging from 18 to 40 years. Obiechina [1] found also the same range with the same average age. Kottinin [7] found an average age of 30 years. In the study by Silva [2], the average age was 31 years. In our study patients under 30 years were the most numerous. This is consistent with our cultural reality marked by early marriage especially in rural areas.

## 4.2. The Seat of the Ruptured Ectopic Pregnancy

The autotransfusion was more observed in the EP to isthmus location in our study with a frequency of 69.5%. The location of the EP in our context seems concordant with the literature data. In the series of Takeda [8] in Japan it was more common in the isthmus seat. This is understandable since the isthmus portion being the thinnest, this location leads more frequently to the rupture [3] [9].

## 4.3. Therapeutic Care

- **Self blood transfused Quantity**

In our study, the average amount of blood received by autotransfusion was 935 milliliters of blood. Selo-Ojeme [10] reported an average amount re-transfused 1000 milliliters of blood. Yamda and Kasamatsu [11] reported an amount of between 1900 and 2600 milliliters. The amount of self-blood transfused described approximately plenty of hemoperitoneum and thereby precocity or not supported. Only 3 patients in our study had received a similar amount with the difference that in the study of Takeda [8], the auto transfused blood passed through a reduction filter system leukocyte after washing.

Given the importance of the amount of blood auto transfused, autotransfusion is a gain for our patients given the scarcity of blood products for blood transfusion in our country. Failing a whole blood bag (about 500 milliliters) is often administered to those who are lucky to have. For women Rh negative, it is even more difficult to obtain blood for homologous transfusions, which significantly increases mortality in this group.

- **Hemoglobin rate**

Self-transfusion helped the rise in hemoglobin of more than 60% of our patients. Twelve (12) hours after the auto transfusion, 96.5% moved from a state of moderate to severe anemia. The same findings were made by Selo-Ojeme [10] who found a rise of hematocrit at the end of their interventions. According to him 1000 milliliters of blood auto transfused allow a rise in the average hemoglobin level from 6 to 12.5 g/dl. The rise in hemoglobin is progressive in the postoperative as evidenced Enrique study [4].

## 5. Conclusion

The broken ectopic pregnancy is frequent in Ouagadougou Schiphra Hospital; it



quickly causes anemia and shock requiring a blood transfusion. In the developing countries facing to the difficulties for finding blood products for homologous transfusion, the autotransfusion could be an alternative in the treatment of ruptured ectopic pregnancy. Autotransfusion is easy to perform and requires little equipment. Various studies found fewer complications in it compared to homologous transfusions. It would be desirable that this technique is popularized in all our health facilities to reduce the death rate from these diseases and the risk of spread of infectious diseases such as AIDS and hepatitis. However it would be desirable that any EP is received before the break not to have to resort to autotransfusion.

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