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Original Research Article

Epidemiology of ectopic pregnancy at Laquintinie Douala hospital (Cameroon): prevalence survey, clinical profile, therapeutic and transfusion issues

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ABSTRACT

Background: Pregnancy is a serious pathology of the first trimester of pregnancy and is the leading cause of death. The objective of our work was to determine the hospital prevalence of ectopic pregnancy (EP), to describe the epidemiological, clinical and therapeutic profile given the often-haemorrhagic context at Laquintinie Hospital in Douala.

Methods: We carried out a retrospective study over 10 years, from January 1st, 2007 to December 31st, 2016, using the operating theatre registers and the files of patients admitted during this period for ectopic pregnancy in the gynaecology and obstetrics department of the Laquintinie Hospital in Douala.

Results: A total of 905 cases of EP for 32,595 deliveries were recorded, for an overall incidence of 2.8%. EP mainly affected the age group of 25 to 35 (60.6%), single people (57.9%) and housewives (46.6%). The risk factors found were similar to those of cervical cancer, namely multiple sexual partners (80.4%), the precocity of sexual intercourse under 18 years (54.1%) and sexually transmitted infections (52.5%). The symptomatic triad (pelvic pain, amenorrhea and metrorrhagia) was found in 46.1% of cases with a respective order of frequency of 96.9%, 77.3% and 63.6%. The management was essentially surgical by radical laparotomy (97% of cases). Two of the 07 deaths were due to religious considerations.

Conclusions: EP remains a frequent pathology in our environment with a heavy toll of tubal amputations and death.

Keywords: Death, Ectopic pregnancy, Laparotomy, Transfusion

INTRODUCTION

Ectopic pregnancies (EPs) are defined as the implantation of the product of conception outside the uterine cavity. They can be life threatening, through a tubal rupture leading to haemo-peritoneum, or even death from hemorrhagic shock. As such, EPs constitute a real diagnostic and therapeutic emergency.¹ Being able to go

from simple pelvic pain to a state of shock with hemodynamic disturbance or even death by hemorrhage after tubal rupture, EP represents until proof of the contrary the diagnosis to be eliminated in priority in a woman of childbearing age with pelvic pain and / or metrorrhagia.¹ The incidence of EP is distributed across the planet, varying between 1-2% of pregnancies. In France, this incidence has doubled or even tripled in the

last two decades with low mortality: one reported annual case.² In 1970, the incidence of ectopic pregnancy was 4.5 per 1,000 deliveries in the United States.³ This incidence increased considerably, going from 4.5 to 19.7 per 1000 deliveries in 1992.³

In the developing world, the incidence of EP is higher, reaching 4% in some regions.⁴ A study carried out at the teaching hospital of obstetrics and gynecology of Befelatanana (Madagascar), found an incidence of 2.48% in 2011; that made in Libreville (Gabon) found an incidence of 2.32% in 2002.^{5,6}

In Cameroon, Leke et al reported an incidence of 0.79% at the Central Hospital of Yaoundé; against 2.3% found by Dohbit et al at the Bafoussam Regional Hospital in 2010 and 3.45% found by Kenfack et al in Sangmelima in 2012.⁷⁻⁹

The increased incidence of ectopic pregnancy may be associated with an increased prevalence of risk factors. Therefore, knowledge of these risk factors is essential in the case of EP.¹⁰ It has three interests: to allow primary prevention of EP by eliminating risk factors, to allow secondary prevention by detecting EP in time in populations at risk and finally, to try to avoid a recurrence.

The work of Coste and Job-Spira demonstrated that almost half of the EPs were linked to a genital infection, more than half of which were linked to Chlamydia trachomatis infections.¹¹ A Swedish study by Egger demonstrated the effectiveness of national measures for the early treatment of Chlamydia infections.¹²

These genital Chlamydia infections are decisive risk factors, with a frequency of 5-15% in France 3, 69% in Libreville (Gabon). They constitute the most frequent risk factor in Cameroon: in 95% of cases.² The fight against risk factors has been an active role for the medical community for many years. Ectopic pregnancy is the most frequent gynecological surgical emergency in most developing countries, the most frequent clinical form encountered is rupture accompanied by hemorrhage and thus engaging the vital prognosis.²

Once the diagnosis of ectopic pregnancy has been made, the management is diversified ranging from therapeutic abstention to surgical treatment (by laparoscopy or laparotomy) through medical treatment.¹³ Therapeutic abstention, medical treatment and laparoscopy are more and more practiced in our country, surgical management by laparotomy remains the most frequently used therapeutic modality.¹⁴

As part of our contribution to knowledge on this, we set out to research the epidemiological, clinical and therapeutic profile of ectopic pregnancies at Laquintinie Hospital in Douala.

METHODS

Type of study, duration and period

We conducted a retrospective study over 10 years, from January 1st, 2007 to December 31st, 2016 in the gynaecology-obstetrics department of the Laquintinie Hospital in Douala by consulting the theatre registers and archived files of patients admitted for ectopic pregnancy (ruptured or not) during this period.

Study population

The target population consisted of patients from the Laquintinie Hospital in Douala who had an ectopic pregnancy between January 1st, 2007 and December 31st, 2016.

Inclusion and exclusion criteria

Included were all patients who had an ectopic pregnancy at Laquintinie Hospital in Douala between January 1st, 2007 and December 31st, 2016 with usable records. Those whose records were unusable were excluded.

Data sampling and analysis

Sampling was random. The variables of interest were: age, profession, marital status, parity, gestational age, gynecological and obstetric history, clinical, therapeutic, transfusion and evolutionary aspects. The data were collected using a pre-tested file, entered with Microsoft Word 2010 software and analyzed by SSPP software. The P values were interpreted at the statistical threshold of 5% and the confidence intervals at 95%.

Ethical consideration

The research authorization of the director of the Laquintinie hospital in Douala was obtained; confidentiality and medical confidentiality were respected.

RESULTS

During the study period, we identified 933 files of patients diagnosed for ectopic pregnancy, 28 of which were unusable and excluded from this fact. The final size of our sample was 905 cases of GEU for 32595 deliveries, achieving a hospital incidence of 2.8%, or a GEU for 36 deliveries (Figure 1).

Socio demographic characteristics

The mean and the median age of the population were 28.59 and 28 years, respectively, with a standard deviation of 5.32 and extremes of 15 and 45. They were mostly 25-35 years (60.6%), single (57.9%) and housewives (46.6%) (Table 1).

Clinical features

Multi-sexual partnership (≥ 2) was the dominant risk factor with a frequency of 728 cases, which represented 80.4% of our sample followed by the earliness of sexual intercourse before 18 years: 490 cases (54.1%) and sexually transmitted infections: 475 (52.5%). In 22.7% of cases (205) the patients were nulli-gravid and nulliparous in 60.8% of cases (550) (Table 1).

More than half of our sample (57.7%) (522 cases) consisted of referrals (Figure 2); pelvic pain was the main reason for consultation (45.5%) (419 cases) (Figure 3) while the triad of pelvic pain, amenorrhea and metrorrhagia was found in 46.1% on clinical examination in order of frequency 96.9%, 77.3% and 63.6% respectively (Figure 4). Paracentesis was the most widely used diagnostic means in 93% of cases (842) with a positivity rate of 86% (724 cases) (Table 2).

Table 1: Distribution by age group, marital status, occupation, gynecological and obstetrical history.

Variables	Frequency (n=905)	Percentage (%)
Age (years)		
15-25	222	24.5
25-35	548	60.6
35-45	135	14.9
Marital status		
Single	524	57.9
Married	371	41
Divorced	2	0.2
Widow/widower	8	0.8
Occupation		
Housewife	422	46.6
Public sector	40	4.4
Private sector	69	7.6
Student	143	15.8
Informal sector	231	25.5
Age at first coitus ≤ 18 years	490	54.1
Number of partners ≥ 2	728	80.4
History of STI/Chlamydia	475	52.5
History of IUD	13	1.4
History of EP	50	5.5
History of abortion	211	23.3
History of tubal surgery	10	1.1
History of use of ovulation stimulants	3	0.3
Gestation		
G0	205	22.7
G1-2	700	77.3
Parity		
P0	550	60.8
P1+	355	39.2

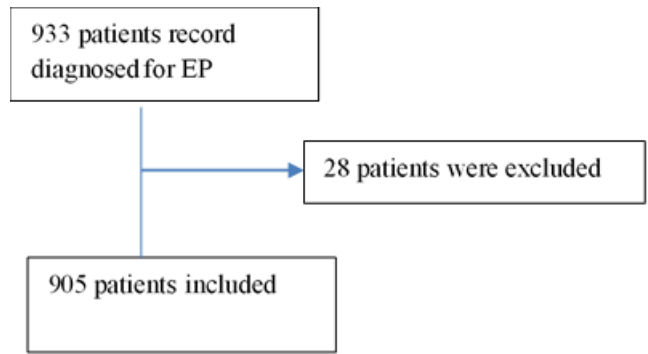


Figure 1: Recruitment diagram.

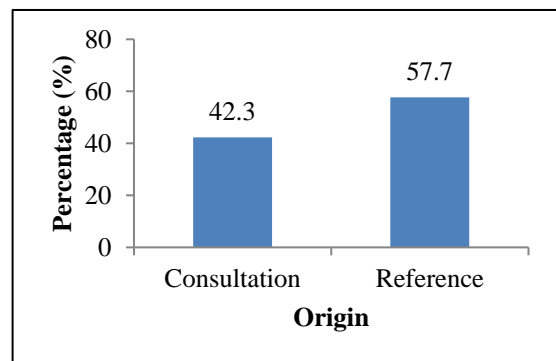


Figure 2: Distribution of patients by origin.

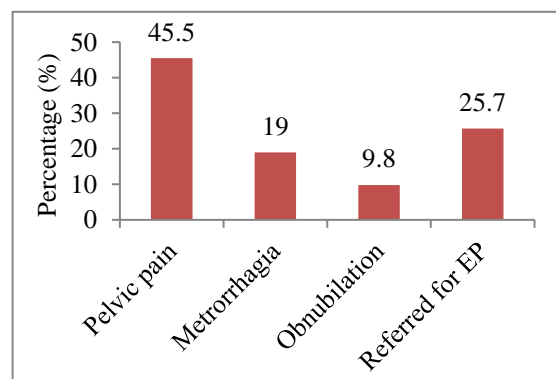


Figure 3: Distribution by reason of admission.

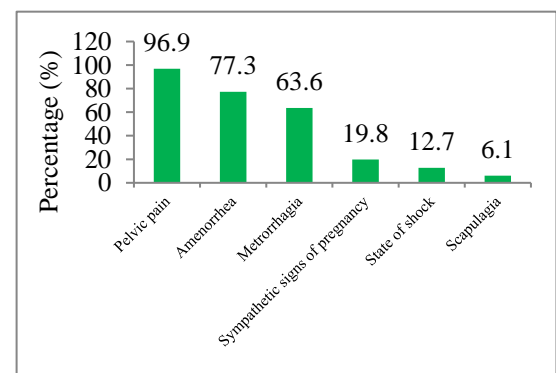


Figure 4: Distribution of the population according to clinical signs and symptoms

Table 2: Distribution of the population according to the diagnostic examinations used and the results obtained.

Exam realised	Frequency (n= 905)	Percentages (%)	Results
Paracentesis	842	93.0	Positive: 724 (86,0%) Negative: 118 (14,0%)
Culdocentesis	130	14.4	Positive: 70 (53,8%) Negative: 60 (46,2%)
b-HCG dosage	178	19.7	Positive: 164 (92,1%) Negative: 14 (7,9%)
Ultrasound	325	35.9	Ruptured EP: 238(73,2%) Unrupture EP: 87 (26,8%)

Table 3: Distribution of the population according to the treatment received.

Type of treatment received	Frequency (n= 905)	Percentage (%)
Medical treatment	0	0
Therapeutic abstention	0	0
Surgical treatment	Laparotomy	905
	Coelioscopy	0

Table 4: Distribution of surgical treatment by laparotomy according to the therapeutic alternative

Therapeutic alternative	Frequency (n=905)	Percentage (%)
Conservative surgery	27	3
Radical surgery	878	97

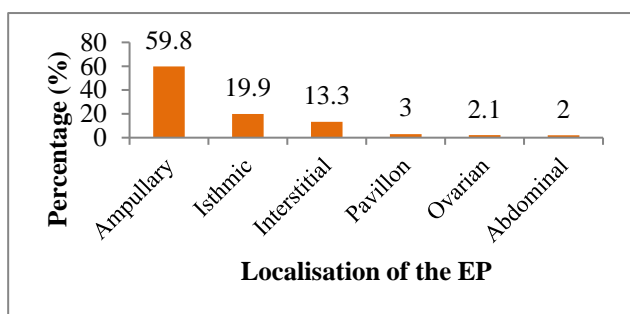


Figure 5: Distribution according to the location of the EP.

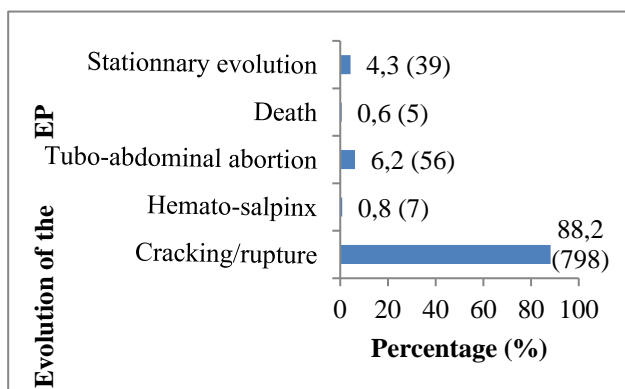


Figure 6: Distribution of the population according to evolution of the EP.

On the other hand, 07 deaths (0.77%) were recorded by hemorrhagic shock during this period, including two transfusion refusals due to religious considerations. The treatment was exclusively surgical with a laparotomic approach and mainly radical by salpingectomy in the order of 97% (878) (Table 3).

Table 5: Distribution according to the reasons for abstention from transfusion.

Reason for lack of transfusion	Number (n=289)	Percentage (%)
No need for transfusion	197	68.2
Religious considerations	62	21.5
Blood not available	27	9.4
Lack of equipment	1	0.3

DISCUSSION

Epidemiological profile

Socio-demographic characteristics and risk factors

The average age of our population was 28.59±5.32 years with extremes of 15 and 45 years. Our results can be superimposed on those of Randriambololona (an average of 30.72 years with extremes of ages 18 and 48) 5 as well as those of Dohbit (average age of 29.69 years with extremes of 18 and 44) 8; the 25-35 years old (constituted the majority (60.6%). This is challenging in more ways than one because this age group constitutes the top level of human reproduction and its high percentage will have to elicit advice for behavior change, particularly sexual behavior.

Because the majority risk factor found in our study was the multiplicity of sexual partners (80.4%) followed by the precociousness of sexual intercourse before the age of 18 years (54.1%) and a history of sexually transmitted infection (51.4%).

If the medical literature and previous work on the subject report more history of sexually transmitted infection, our results are not contradictory, however, since the multiplicity of sexual partners is a potential determinant of sexual contamination helped in this by cervical immaturity. Such as the precocity of sexual intercourse in the under-18 age group thereby anticipating the variable

age greater than 35 years retained in the literature as a risk factor.¹

This means that the history of induced abortions reported by Randriambololona et al (36%)⁵ as well as the history of PID from the work of Dohbit et al (24.75%)⁸ are only corollaries of a dilapidated sex life such as the mask of our profile presents itself.

If ectopic pregnancy is the tubal sanction of a late egg as a result of a physiologically defective tube, these observations arise as a result of the factors mentioned above by our findings and those of other authors. They often stem from a precarious social experience. On the social level, many of our patients were single (57.98%) and housewives (46.6%) or working in the informal sector 25.5%. This means that our sample was predominantly low income and therefore at low economic level; therefore exposed to sexual practices that provide infections in accordance with the work of Namaya et al and Thonneau.¹⁵⁻¹⁶

Clinical profile and diagnostic examinations

In the majority of studies, GEU is associated with low parity.^{6,20,21} In our series, the average parity was 1.28. The nulliparous and primiparous were the most affected: 60.8%. These results are similar to those of Lankouande et al in Ouagadougou in 1998, as well as those of Sindayirwanya et al in Burundi in 1991.²²⁻¹⁷

The symptomatic triad (amenorrhea, pelvicgia and metrorrhagia) was found in 46.1% of the cases in order of frequency 96.9% for pelvic pain, 77.3% for amenorrhea (77.3%), and 63, 6% for metrorrhagia unlike the findings of Majhi in whom pelvic pain was predominant (86.1%) followed by amenorrhea (76.1%) and metrorrhagia (42.2%) with, however, a effectiveness of the symptomatic triad confirming data from the literature.^{1,18}

In a medical environment with a low technical and financial resource, the clinical approach is often preponderant in our health structures in order to compensate as much for these shortcomings as for the late delays in consultation legions in our communities; this is what justifies as much as other authors in the same geographical area including Dohbit and Kouam our 59% of cases by clinical diagnosis and paracentesis (93%) as much as Majhi Nos, 7% of shock on admission attests to the delay in consultation and sometimes to inaccessibility to care given the precariousness of our popular strata here mainly single and housewives^{8,18,19}

Hence the strategy to promote primary prevention by controlling risk factors and secondary prevention by early and effective treatment of genital infections.^{11,12} The findings of other authors are heterogeneous and relate mainly to the health organization and the sizes of the samples.^{8,17} The mean gestational age at the time of

admission was 8.76 ± 2.41 weeks of amenorrhea similar to the 8SA of Meye et al.⁶

Therapeutic aspects and transfusion issues

Therapeutic aspects

As much as other works from the same geographic area and elsewhere, the treatment was surgical and radical by salpingectomy in 97% of our series.^{8,19} This radical option was justified by the high rate of ruptured GEU in our sample (88.2%) with large hemoperitoneum, the average of which was 1556 ± 916.36 ml. Ampullary localization was the most frequent with 59.8%, superimposable on that of Tumenta (61.9%), as well as that of Mohamed (60%).^{20,21}

Transfusion issues

The massive hemoperitory with an average of 1556 ± 916.39 ml explains the use of blood transfusion in the order of 68.1% of cases (or 616 cases out of 905). But in 21.5% of the cases the transfusion indication was relevant but not honored because of philosophical and precisely religious barriers, the outcome of which was fatal with the death of 02 patients; this problem requires education of the community masses in order to remove any uncomfortable ambiguity for a practitioner faced with hemodynamic instability of hemorrhagic cause. Because at the severe stage of anemia only hemoglobin replaces hemoglobin, filling with crystalloids is only a waiting measure

Evolving profile and complications of GEU

Evolutionary profile of the GEU

The patients arrived at the ruptured stage in 88.2%, or 798 of the cases. These results join the 87.62% of Dohbit et al.⁸ This high rate is often dependent on the delay in legion consultation in our communities.

Complications of GEU

Two complications were recorded 11 cases of hemorrhagic shock (1.2%) resulting in 07 deaths, two of which by transfusion due to religious considerations (0.77%), ie a survival rate of 99.22% as opposed to Dohbit et al had reported post-operative infection as complications of GEU (1.4%).⁸

CONCLUSION

The ectopic pregnancy at Laquintinie hospital has a hospital incidence of 2.8% with a survival rate of 99.22% despite religious barriers to blood transfusion which caused 02 deaths out of a total of 07 deaths. The mask of the patient in our study is a single housewife with the same determinants as those of cervical cancer, namely the

precocity of sexual intercourse, multiple sexual partnership and their corollaries of sexually transmitted infections. All things that call for a strengthening of primary and if necessary secondary prevention strategies.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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