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MISDIAGNOSED ANTE-PARTUM APPENDICITIS DISCOVERED AT LAPAROTOMY FOR PERITONITIS: A CASE REPORT AND LITERATURE REVIEW IN YAOUNDE, CAMEROON.

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ABSTRACT

The prevalence of appendicitis in pregnancy is 0.1% – 0.2%. It has not been widely studied in Cameroon. Signs and symptoms of appendicitis are modified during pregnancy and this makes the diagnosis difficult. We herein report the case of a 35 year old Gravida 3 Para 2.1.0.3 who presented with acute appendicitis in a context of biologically confirmed malaria with threatened premature labour at 36 weeks of pregnancy. Appendicitis was not recognised, so she was treated for malaria and gave birth prematurely. Emergency laparotomy indicated for peritonitis was done on day 2 post-partum and appendicitis was found. Postoperative course was uneventful and the patient was discharged 9 days later. Pathophysiology, clinical presentation and management of appendicitis in pregnancy are herein discussed.

INTRODUCTION

Appendicitis occurs in 1/1000 - 1/2000 pregnancies and 1 case of appendicitis out of 100 occurs in a pregnant woman. (Abbasi N et al, Lebeau R et al, Harouna YD et al) [1-3]. Appendicitis is the most frequent non obstetrical acute abdominal emergencies requiring surgery. (Harouna YD et al, Wei PL) [3,4]. In Cameroon, appendicitis indicates 4.4% of emergency abdominal surgery in adults but its occurrence during pregnancy has not been widely studied. (Ngowe NM et al) [5]. The interest of the case of appendicitis in pregnancy we herein report lies in the scarcity of the condition, in its atypical, polymorphic and misleading clinical presentation and in materno-foetal morbidity. [2,3, 6-8].

Patient and observation

Mrs M.S, a 35 years old Gravida 3 Para 2.1.0.3 married teacher, consulted in our emergency unit on day 2 post-partum following a premature delivery at 36 weeks 5 days. Her presenting complaint was an abdominal pain evolving since five days. The onset of that right flanc lancinating pain was progressive in a context of fever since four days. There was neither aggravating nor relieving factor. The pain had no irradiation and was later on associated with nausea and vomiting. No medication was taken and a few hours later she had uterine contractions that led her to seek medical advice in a District Hospital. The working diagnosis was malaria complicated by threatened premature delivery (positive rapid diagnostic test and thick blood film showing hyperparasitemia (18 000 trophozoïts/micoliter)). Intravenous quinine was given. Pyelonephritis was eliminated as a differential by negative urine culture. Since hyperleucocytosis above normal values for pregnancy was found, prophylactic antibiotic (ceftriaxone) was administered.

Membranes were ruptured and she gave birth (at 36 weeks 5 days) two days later to a live baby girl weighing 2.4 Kilograms. Active Management of second stage of Labour was done. She reported that the pain diffused to the whole abdomen just after childbirth with distension but without arrest of intestinal transit. Management with paracetamol and amoxicilin-clavulanic acid was not successful. Abdominopelvic echography revealed homogenous hepatomegaly, splenomegaly and peritoneal fluid collection that was taped and analysed. *Klebsiella pneumonia* sensitive to ceftriazone and ofloxacine was identified. Emergency laparotomy was indicated and the patient preferred to be operated in our unit and left the District Hospital.

Her past medical history was unremarkable. On systematic enquiry, the following were reported: painful abdominal distension, fever and vomiting. Flatulence and defecation were present.

On physical examination, her general condition was fair and vital parameters were: blood pressure of 105/75 millimetres of mercury, pulse rate of 115/minute, respiratory rate of 32 cycles/minute and a temperature of 38.1 degrees Celsius. Conjunctivae were pink and the naso-gastric tube in place had drained 500 millilitres of bilious secretions. Cardiac and pulmonary examinations were normal and milk letdown was not effective. Abdominal wall distension made it impossible to accurately measure symphyseal-fundal height. On palpation, we noted global abdominal tenderness maximal in right lower quadrant. There was no rebound tenderness. Hepatomegaly and shifting dullness were present. Bowel sounds were normal. On vaginal exam *lochia rubra* oozed from a normal cervix. Digital vaginal examination found a short and open cervix.

Douglas pouch was bulging and tender and no adnexal mass was felt. On rectal examination, the Douglas pouch was bulging and tender. Limbs were normal. Our working diagnosis was peritonitis and the differential was infected ascitis of hepatic origin. Liver function tests and tumour markers were normal. The preoperative work up (coagulation profile, kidney function tests, ionogramme) was normal. Echography revealed enlarged liver, enlarged spleen and abundant peritoneal fluid with a uterus of normal size. Right adnexae were stucked to the uterus and appendix was not seen. Anaesthetic consultation was carried out and emergency laparotomy peformed with the following findings: 3 liters of pus, multiple type C adhesions, necrotico-fibrotic right adnexial mass binding the appendix. Appendectomy and right adnexectomy were done followed by adequate washing of the peritoneal cavity. Two drains were left, one in the Douglas pouch and the other in the left paracolic gutter. Abdomen was closed routinely and antibiotics and painkillers were prescribed, alongside with adequate resuscitation. Postoperative course was uneventful and the patient was discharged nine days after surgery.

Pathology of the specimen confirmed necrotic and inflammatory nature of the appendix, the right ovary and fallopian tube.

DISCUSSION

Appendicitis can occur in any of the trimesters of pregnancy (Nouira M et al, Marret H et al) [7,8]. Clinically, pain remains the main symptom but its location follows appendix in its migration during pregnancy: moving upward and backward from the right iliac fossa (Mc Burney) in the first trimester to the right hypochondrium in the third trimester. (Harouna YD et al, Marret H et al) [3,8]. That pain is attenuated during pregnancy by hypercortisolism which inhibits inflammatory reaction; moreover during the third trimester, it may be mistaken for uterine contractions and may be located at ombilicus. (Harouna YD et al, Marret H et al) [3, 8]. During the first trimester, symptoms of appendicitis mimic those of normal pregnancy; For example, physiological vomiting of pregnancy can distort diagnosis during the first trimester but are considered pathologic afterwards. (Marret H et al) [8].

Our patient had an intense pain of the right flanc followed by vomiting, but clearly distinct from uterine contractions that started later. Fever is of low grade (38 – 38.5 °Celsius) and inconstant in case of appendicitis during first trimester, which is not the case in third trimester. (Marret H et al) [8]. In our patient fever was elevated and persisted till peritonitis was diagnosed. Findings on abdominal palpation are distorted (mainly during third trimester) by distension and hyper-looseness of the muscles which limit guarding (and even contracture in case of peritonitis) and by reduction in inflammatory response. (Lebeau R et al, Harouna YD et al, Marret H et al) [2, 3, 8]. It is therefore understandable that the medical team managing our patient opted for malaria rather than appendicitis given the high level of *Plasmodium Falciparum* in blood. The Douglas pouch of our patient was painful as it is described typically. Full blood count revealed hyperleucocytosis at 16500/µL with neutrophilia at 88% which was suggestiveof an infectious process despite physiologic pregnancy-associated leucocytosis especially in labour. Indeed, leucocytosis is considered abnormal above 12000 – 15000/µL with more than 80% of neutrophils. (Harouna YD et al, Marret H et al) [3, 8].

C - Reactive Protein was not done. Echography classically shows an incompressible appendice of more than 7 millimeters of diameter and a fluid collection in the pouch of Douglas. In our case, echography was done at the stage of peritonitis and showed peritoneal fluid in the whole peritoneal cavity. (Marret H et al) [8]. During the third trimester, the main differential diagnoses are: pyelonephritis, necrobiosis of afibroid and acute cholecystitis. (Marret H et al) [8]. They were excluded by sterile urinalysis and abdominal echography. The main maternal complication is peritonitis which occurs either by perforation of the inflamed appendix or by diffusion of

contiguity to the peritoneal cavity. (Marret H et al) [8]. Peritonitis occurs in 20.3% of appendicitis in pregnancy. (Abbasi N et al,) [1]. This high prevalence is explained by the fact that omentum (that normally delimits appendicular infection) and intestinal loops are pushed up- and backward by the gravid uterus. (Harouna YD et al, Marret H et al) [3,8].

Moreover, imbibition and hypervascularisation of the abdominal cavity during pregnancy and the weak inflammatory response (hypercortisolism) favour dissemination to the whole peritoneal cavity. (Marret H et al) [8]. At last, the diversity of symptoms of appendicitis in pregnancy delays correct diagnosis which is sometimes done at the stage of peritonitis as the case reported herein. (Lebeau R et al, Harouna YD et al, Dufour P et al, Nouira M et al, Marret H et al) [2,3, 6-8]. Due to the afore-mentioned anatomical changes the picture of acute peritonitis during third trimester and post-partum is usually deceitful. (Marret H et al, Mohsine R et al) [8,9]. Indeed, contracture of the abdominal wall is present in one out of five cases and there may be no arrest of intestinal motility like in the case herein reported. (Mohsine R et al) [9].

The main foetal risks are: prematurity, small birthweight and neonatal infection. (Lebeau R et al, Harouna YD et al, Wei PL et al, Dufour P et al, Nouira M et al, Marret H et al) [2-4,6-8]. Our patient gave birth prematurely but the neonate was not infected. Surgery is the cornerstone of management. (Abbasi N et al, Marret H et al) [1, 8]. Our patient underwent emergency laparotomy and, apart from 3 litres of pus and adhesions the main finding was an inflamed appendix embedded in a necrotico-purulent complex with right ovary and tube.

CONCLUSION

Appendicitis in pregnancy is a rare but serious disease as illustrated by the case we have reported. In addition to its severity, the clinical picture is polymorphous and deceitful leading to late diagnosis. Practitioners should therefore properly clerk patients and carry out laparotomy early in order to reduce morbi-mortality.

AUTHORS CONTRIBUTION

Professor Nana, Drs Fouelifack and Fouogue managed the case and wrote the manuscript. Drs Essiben, Eko, Fouedjio wrote the manuscript. Professor Mbu, as the Head of Unit supervised the whole team.

CONFLICT OF INTERESTS

The authors declare that they have no conflicts of interests for this manuscript.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

REFERENCES

1. Abbasi N, Patenaude V, Abenhaim HA. (2014). Management and outcomes of acute appendicitis in pregnancy-population-based study of over 7000 cases. *British Journal of Obstetrics and Gynecology*, 121(12), 1509-1514.
2. Lebeau R, Diane B, Koffi E, Bohoussou E, kouame A, Doumba Y. (2005). Appendicitis and pregnancy: 21 cases. *Journal of Gynecology and Obstetrics and Biology Reproduction (Paris)*, 34 (6), 600-605.
3. Harouna YD, Garba M, Sabry M, Gamatie Y, Abdou I. (2003). Appendicite et grossesse avancée: à propos de 3 cas à l'Hôpital national de Niamey, Niger. *Bulletin de la Société de pathologie exotique*, 96(2), 83-85.
4. Wei PL, Keller JJ, Liang HH, Lin HC. (2012). Acute appendicitis and adverse pregnancy outcomes: a nationwide population-based study. *Journal of Gastrointestinal Surgery*, 16 (6), 1204-1211.
5. Ngowe NM, Bissou MJ, Atangana R, Eyenga VC, Pisoh-Tangnym C, Sosso AM. (2008). Aspects cliniques actuels des appendicites aiguës de l'adulte à Yaoundé, Cameroun. *Bulletin de la Société de pathologie exotique*, 101(5), 398-399.
6. Dufour P, Delebecq T, Vinatier D et al. (1996). Appendicitis and pregnancy. Seven case reports. *Journal of Gynecology and Obstetrics and Biology Reproduction (Paris)*, 25(4), 411-415.
7. Nouira M, Jerbi M, Sahraoui W et al. (1999). Acute appendicitis during pregnancy. A review of 18 cases. *Revue Française de Gynécologie et d'Obstétrique*, 94(6), 486-491.
8. Marret H, Laffon M, De Calan L, Bourlier LP, Lansac J. (2000). Urgences chirurgicales au cours de la grossesse. *Encyclopédie Médico-Chirurgicale, Gynécologie/Obstétrique*, 5-049-D-10, 13.
9. Mohsine R, Ismael F, Lekhal B et al. (1996). Péritonite et grossesse. Médecine du Maghreb, 55, 27-29.