Case Report

Successful Management of an Unruptured Extrauterine Pregnancy in a Woman with a History of Prior Miscarriage at Tertiary Hospital in Indonesia

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Abstract

Objective: To describe the prompt and successful treatment of an extrauterine pregnancy case in a tertiary-level hospital in Indonesia.

Methods: We report a case of prompt and successful management of unruptured tubal pregnancy in the dr. Soetomo General Hospital Surabaya.

Results: A 32-years-old woman presented with lower abdominal pain and vaginal bleeding one days before admission. She was sexually active, used no contraceptives, and had a history of one miscarriage. On examination, she was hemodynamically stable. A bimanual exam revealed cervical motion tenderness and pain. A high human chorionic gonadotropin (hCG) level (1,725 IU/L) and a left-sided mass, highly suspected as an extrauterine gestational sac confirming a 6 week, 1 days age of pregnancy without sign of free fluid in the abdomen nor fetal heart rate on ultrasound, prompted diagnostic laparoscopy. We found a tubal pregnancy located on the ampullae of the left fallopian tube with minimal hemoperitoneum (50 ml). A chromopertubation test was done to ensure a patent right fallopian tube, so we did a salpingectomy. The patient recovered well and was discharged home on day 2 post-procedure.

Conclusion: Early diagnosis is vital and feasible to prevent morbidity and mortality in women with ectopic pregnancy. All sexually active women complaining painful abdomen or vaginal bleeding must be examined for an ectopic pregnancy to enable early diagnosis and prompt treatment. A laparoscopic surgery done by a trained individual provided a safe and minimally invasive intervention to this case.

Keywords: case report, ectopic pregnancy, laparoscopy, salpingectomy, tubal pregnancy.

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INTRODUCTION

Occurring in about 1-2% of all pregnancies worldwide, ectopic pregnancy is a common etiology of pregnancy loss. It also jeopardizes maternal health and life, especially when it is not diagnosed and promptly managed. Almost all (95%) percent of ectopic pregnancies took place in fallopian tubes.[1] Ampullae is the most common site where ectopic tubal pregnancies happen, accounting for 70% of all cases of ectopic pregnancies.[2] Women with ectopic pregnancy may complain about blatant symptoms, such as overt pain in the abdomen and vaginal bleeding, or more vague symptoms, such as nausea and vomiting.[3] Diagnosis and exact location of ectopic pregnancy can be made during the 1st trimester of pregnancy using ultrasonography.

Early diagnosis plays a crucial role in preventing life-threatening complications like hemorrhagic shock resulting from ruptured ectopic pregnancy. The prevalence of ruptured extrauterine pregnancy varies between developed and developing countries, often due to factors such as access to early diagnostics. In Ghana, for instance, only 5.43% of tubal pregnancies remain unruptured, primarily due to the low detection rate stemming from factors such as limited early pregnancy awareness, delayed reporting, and suboptimal utilization of diagnostic tests in

healthcare facilities.[4] Similar figure was found in a study from Bangladesh and India,[5, 6] where the proportion of unruptured ectopic pregnancy was only 5.7%5 and 18.75%, respectively. Inversely, the rupture rate in a population-based study conducted in France was only 18%.[7] Similarly, a European review approximated that only 20% of ectopic pregnancies failed to be diagnosed while still intact.[8]

Indonesia is a developing country with around 5 million live births annually, with ectopic pregnancy happening in approximately 60.000 pregnancies annually.[9] Our center, dr. Soetomo General Hospital is a tertiary-level referral hospital managing about 600 births in 2021. A previous study in our center found 98 patients with ectopic pregnancy in 2 years (2013-2014). It is quite rare to find a case with unruptured sacs. Mostly came with ruptured ectopic pregnancy and life-threatening hemorrhagic shock.[9] Currently, no previous estimate exists on the rate of unruptured ectopic pregnancy and ectopic pregnancy-related complications in Indonesia. A systematic search in significant databases also confirmed that there is no case report of unruptured tubal pregnancy from Indonesia which from the technical aspects perfomed minimally invase approach with laparoscopy and performed chromopertubation. Through this report, we would like to describe a case of unruptured tubal pregnancy and demonstrate the feasibility of its management to prevent maternal complications in an Indonesian hospital.

CASE PRESENTATION

A 32-year-old woman gravida 2, on her second pregnancy at 6-7 weeks gestational age [GA] came to our hospital's emergency room with a chief complaint of abdominal pain one days before admission. Along with the abdominal pain, she also experienced vaginal bleeding (Spotting) twice 12 hours before admission. She had a previous history of miscarriage and had undergone a curettage for the treatment. She used no contraceptives. The patient was hemodynamically stable with positive elevated β human chorionic gonadotropin (β-hCG) levels (1,725 IU/L) and normal serial hemoglobin levels (12–13 g/dl). From the physical examination, we found cervical motion tenderness and pain found on the bimanual examination. Ultrasound by obstetrician revealed a left-sided mass, highly suspected as an extrauterine gestational sac confirming a 6 week, 1 days age of pregnancy. It also showed no sign of free abdominal fluid and no fetal heart rate (Figure 1). It

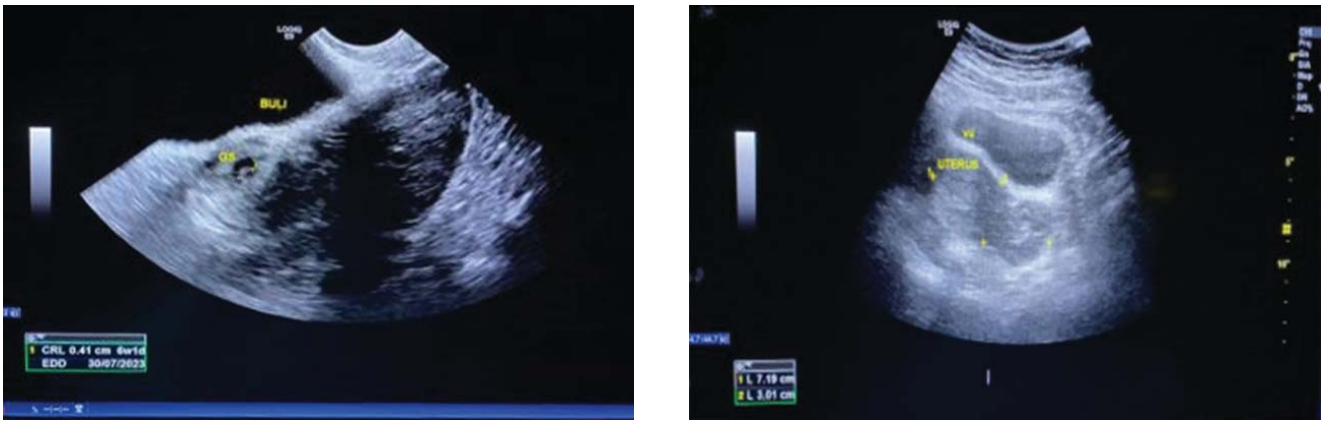

Figure 1. Transvaginal ultrasound revealed a left-sided mass suspicious of an extrauterine gestational sac with biometry similar to 6 weeks, no sign of free abdominal fluid, and no fetal heart rate.

Due to the unclear specific location of the gestational sac from the ultrasound, we then commenced diagnostic laparoscopy. We found a tubal pregnancy located on the ampullae of the left fallopian tube with minimal hemoperitoneum (50 ml) (Figure 2). A chromopertubation test revealed a patent right fallopian tube. We then performed a left total salpingectomy (Figure 3). The patient then recovered well without any event. She was discharged home on day 2 post-procedure.

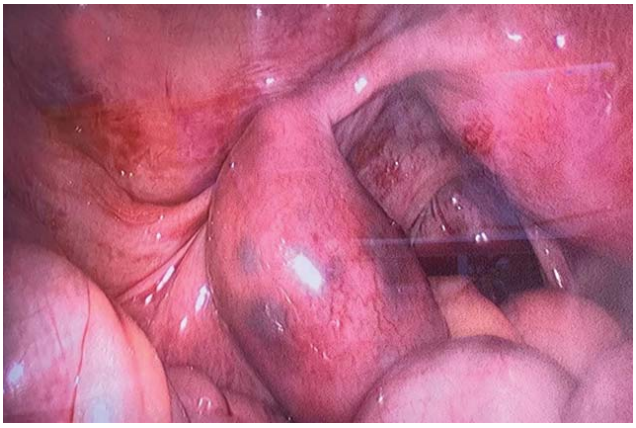

Figure 2. Intraoperative documentation showed the engorged left fallopian tube filled with an ectopic gestational sac (diameter size 3.5 cm) with minimal hemoperitoneum

Figure 3. The pathology specimen was taken from the salpingectomy procedure.

DISCUSSION

Ectopic pregnancy contributes significantly to pregnancy-related morbidity and mortality, especially in the earliest three months of pregnancy. A diagnosis of ectopic pregnancy had a critical clinical implication; however, it could also be easily misdiagnosed. Early diagnosis of ectopic pregnancy may prevent women from complications, such as ruptured ectopic pregnancy and life-threatening hemorrhagic shock.

A suspicion of ectopic pregnancy should arise in all reproductive-aged women who are sexually active, especially those who presented with classic symptoms like the patient in our case report. Vaginal bleeding and pain in the abdomen are classic symptoms of extrauterine pregnancy. A study found that those symptoms appeared in 76% and 66% of women with ectopic pregnancy who presented to an emergency room.[10] Those symptoms may result from ectopic implantation, which subsequently causes inflammation and damage to the fallopian tubes.[6]

The suspicion may be strengthened with further history taking to explore factors or conditions that can heighten the risk of extrauterine pregnancy. Some known risk factors were mainly those which interfere with the normal tubal anatomy or the ciliary function, such as infertility, prior tubal surgery, infection in the reproductive tract or pelvic inflammatory disease, endometriosis, diethylstilbestrol (DES) exposure, vaginal douching, smoking, contraceptive (oral contraceptive pills, intrauterine device, or surgical sterilization) failure, and finally, a prior history of ectopic pregnancy.[1,11,12] In this case, the patient underwent a curettage procedure for her miscarriage history, which, although rare, had previously been recorded as a risk factor of ectopic pregnancy.[9]

The diagnosis can then be confirmed with positive serum β-hCG levels and ultrasound. Transvaginal ultrasound may be used to diagnose ectopic pregnancy during 5–9 weeks GA, with positive signs such as a sac of gestation that contains a fetal pole and heartbeat in the adnexal structure.[13] Free fluid may be found if the gestational sac has ruptured.[12] In our patient, we found a left-sided mass suspicious of an extrauterine gestational sac without any sign of abdominal free fluid or fetal heart rate. Her β-hCG level was also much lower than the level that was usually correlated with an increased risk of ruptured extrauterine pregnancy (>5,000 IU/ml).[12] She also did not have any other risk factor of rupture, such as a history of infertility, ovulation induction, or tubal damage, except that she had no previous history of contraceptive use.[7]

Due to her clinical condition, diagnostic laparoscopy was then chosen over laparotomy.[1,14] During the procedure, the gestational sac was found in the ampullae with a diameter of 3.5 cm, below the size associated with a higher risk of rupture (>4 cm).[12] Chromopertubation was performed to demonstrate the right fallopian tube's patency to ensure possible future natural pregnancy.[15] Due to the presence of a patent contralateral tube, salpingectomy was then decided because salpingostomy did not increase the chance of obtaining intrauterine pregnancy while putting the patient at risk of bleeding and persistent trophoblast tissue.[16] Finally, the patient was counseled for the subsequent pregnancy, as

the history of tubal surgery for prior extrauterine pregnancy heightened the odds of future extrauterine pregnancy by approximately three times (95% confidence interval [CI] 1.21-36.51).[11]

The successful management of unruptured extrauterine pregnancy, particularly in this case, relies heavily on early detection and prompt treatment. Generally, when diagnosed early and managed appropriately, the success rate of treating an unruptured ectopic pregnancy is relatively high. However, the success rate may vary based on the experience and proficiency of the medical team handling the patient. Timely diagnosis and suitable treatment typically lead to higher success rates in managing unruptured ectopic pregnancies.

In conclusion, in developing countries with limited access to ultrasound during early pregnancy, many women with ectopic pregnancies present with ruptured sacs, with or without hemodynamic deterioration. Nevertheless, this case highlights that early diagnosis and timely minimally invasive surgery are achievable, thus helping to prevent ectopic pregnancy-related morbidity and mortality. Therefore, ectopic pregnancy should be considered an important differential diagnosis among sexually-active reproductive-aged women experiencing lower abdominal pain and subsequent vaginal bleeding.

CONCLUSIONS

Early diagnosis is crucial and feasible for preventing morbidity and mortality in women with ectopic pregnancy. It carries significant clinical implications and can help prevent serious complications, such as ruptured ectopic pregnancy and life-threatening hemorrhagic shock. All sexually active women who present with abdominal pain and vaginal bleeding should be evaluated for possible extrauterine pregnancy to enable early diagnosis and prompt treatment. Ultrasonography and β-hCG level test must be done to exclude this differential diagnosis. Then, a laparoscopic surgery done by a trained individual provides a safe and minimally invasive intervention, while laparotomy can be done if the patient's condition deteriorates.

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