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A ruptured ectopic pregnancy with contralateral hematosalpinx: A case report

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Abstract

Introduction

Extrauterine pregnancy accounts for 1-2% of all pregnancies. Of all extrauterine pregnancies, approximately 95% occur in the fallopian tube. However, the occurrence of bilateral ectopic pregnancy is rare with an incidence of 1 out of 1,589 ectopic pregnancies. The diagnosis and management of bilateral ectopic pregnancy pose a challenge due to its retrospective diagnosis based on Norris criteria and there is no standardized treatment guideline worldwide for its management.

Case presentation

A 28-year-old woman, gravida 3, para 2 living 2 at gestation age of 6 weeks by date and 8 weeks by transvaginal ultrasound presented with sudden onset of sharp right lower quadrant abdominal pain accompanied with vaginal bleeding. Upon evaluation, she was pale, tachycardic with abdominal muscle guarding, rebound tenderness with positive cervical motion tenderness and fullness of posterior fornix. Urine pregnancy test was positive and abdominal-pelvic ultrasound revealed an empty endometrial cavity with the right-side heterogenous ill-defined echo-complex adnexal mass measuring [35x40]mm with free fluid seen in the hepatorenal recess and splenorenal space, left adnexa could not be appreciated. The decision to perform an emergency explorative laparotomy was reached due to an acute abdomen. Intraoperatively, ruptured and actively bleeding right fallopian tube with a gestation sac and hematosalpinx on the left fallopian tube. Bilateral salpingectomy was performed and sent for histologic studies. Histopathological evaluation later revealed a presence of hemorrhage, necrosis, and few remnants of chorionic villi on the right side while contralateral fallopian tube had edematous stroma, congested vessels with accumulation of inflammatory cells features of chronic salpingitis. On the third day post-surgery she was fully recovered and was discharged home.

Conclusion

Diagnosis and treatment of a unilaterally ruptured ectopic pregnancy complicated by contralateral hematosalpinx are difficult. Such patients' care should be tailored to their specific needs, with a focus on their future fertility goals, patient safety, and the availability of necessary resources.

Keywords: *Ectopic pregnancy, Salpingectomy, Hematosalpinx.*

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Introduction

The incidence of extrauterine pregnancy globally is reported to range from 1% to 2%. Of all ectopic pregnancies, 95%are reported to occur in the fallopian tube (1). Bilateral ectopic pregnancy is a rare form of extrauterine pregnancy, it is reported to be 1 in 200,000 uterine pregnancies and 1in 1,589 ectopic pregnancies (2). The incidence of ectopic pregnancy is recently reported to be increasing due to the use of assisted reproductive technology, and pelvic inflammatory diseases (1,3). Diagnosis of bilateral ectopic pregnancy is largely a retrospective diagnosis based on Norris criteria which requires presence of microscopic demonstration of chorionic villi in each fallopian tube (4). Thus, it poses a challenge especially with swollen tube due to infectious cause resembling unruptured ectopic pregnancy.

Management of bilateral ectopic pregnancy is controversial, different management approaches have been proposed ranging from bilateral either salpingectomy, salpingectomy and salpingostomy of unruptured tube, or salpingectomy followed by use of methotrexate for unruptured side (2). Here we report a case of unilateral ruptured ectopic pregnancy with contralateral chronic salpingitis with hematosalpinx mimicking an unruptured ectopic pregnancy managed by bilateral salpingectomy. It's diagnostic challenges, management dilemmas, and future fertility will be discussed.

Case presentation

A 28-year-old woman who was gravida 3, para 2 living 2, with history of amenorrhoea of six weeks by dates and approximately eight weeks by transvaginal ultrasound was admitted with sudden onset of sharp lower abdominal pain for one day, which was more marked on the right lower quadrant and accompanied by vaginal bleeding. The pain was accompanied by heartbeat awareness and general body malaise; however, she had no difficulty breathing, fever, vomiting, or loss of consciousness. She denied using contraception in the past. She had previously been clinically diagnosed with pelvic inflammatory disease in February 2022 at a primary health facility and was treated for fourteen days with oral antibiotics. She denied prior use of ovulation induction drugs; no smoking history was reported. Her obstetric history had been unremarkable. She was afebrile, and pale, with no lower limb edema. Her blood pressure was 99/66 mmHg, and her pulse rate was 108 beats/minute. On systemic examination, she had obese abdomen, which was distended, moving with respiration, with positive muscle guarding, rebound tenderness and positive fluid thrill. On pelvic digital examination, she had posterior fornix fullness, the cervix was closed, and there was positive cervical motion tenderness. Other systems, such as respiratory and cardiovascular, were essentially normal.

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A urine pregnancy test (UPT) done at the bedside was positive, and an emergency bedside ultrasound showed that the endometrial cavity was empty. The right-side heterogeneous and poorly defined, echo-complex adnexal mass measured 35 by 40mm was identified. There was a lot of echogenic free fluid in the cul-de-sac above the uterus, as well as in the right hepatorenal recess and left splenorenal recess, the left adnexa could not be appreciated. A Complete blood count revealed hemoglobin 6.2g/dl with microcytic hypochromic anemia, and a normal leukocyte and platelet count. A diagnosis of a ruptured ectopic pregnancy was reached, and she was counseled for an emergency explorative laparotomy.

Intraoperatively, hemoperitoneum containing approximately 800 ml was sucked with 450mls clots evacuated. A right ruptured ectopic gestation at the ampulla area of the fallopian tube was identified, furthermore the contralateral fallopian tube was swollen, and hematosalpinx was identified on aspiration with suspicion of an unruptured ectopic pregnancy. A bilateral salpingectomy was done, and both ovaries appeared healthy. Fallopian tubes were sent to a histopathology lab in different containers.

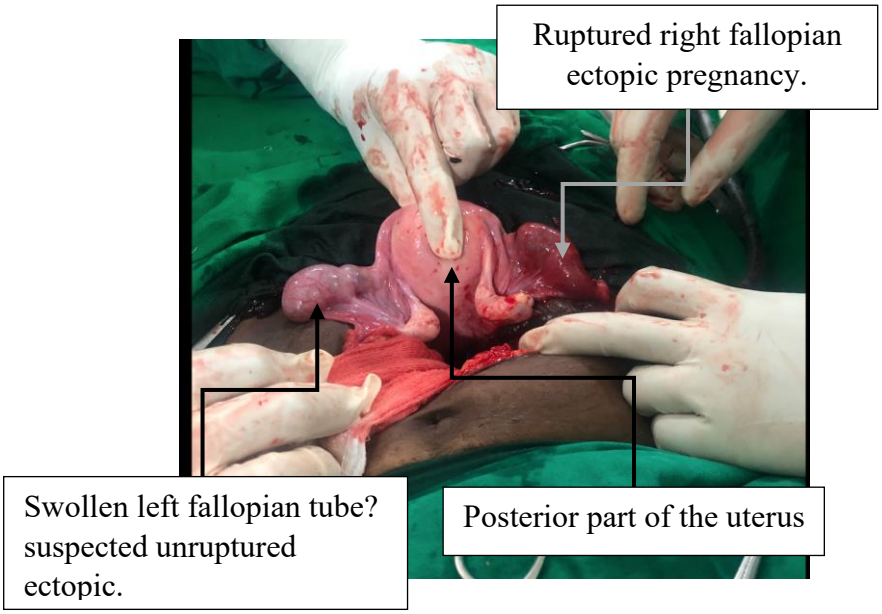

Figure 1: Show the ruptured right side fallopian ectopic pregnancy and left side hematosalphnix

Our patient received 2 units of blood post-surgery, IV fluids and IV antibiotics for 24 hours. On day one postoperatively she was clinically stable and her control serum Beta Human Chorionic Gonadotropin (Bhcg) was 976mIU/ml. Control haemoglobin was 8.5 g/dl. She was discharged home on the third day and scheduled for reevaluation and histopathological result in two weeks. The histopathology report showed the right fallopian tube with features of

product of conception while the left fallopian tube had swollen, congested vessels and features of chronic salpingitis as shown in Figure 2 and 3.

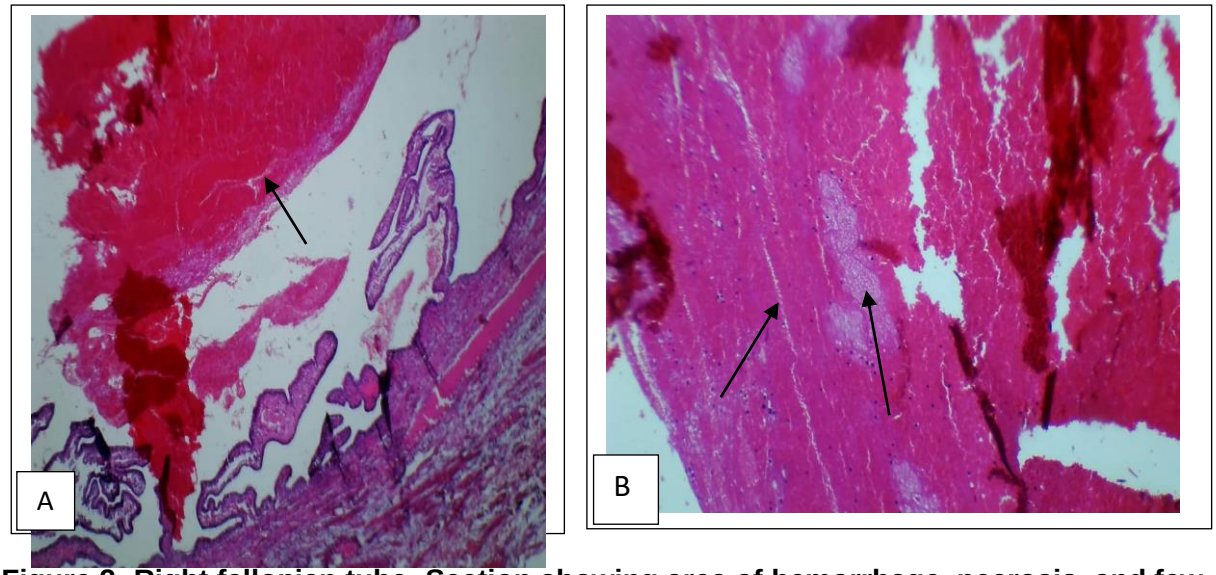

Figure 2: Right fallopian tube: Section showing area of hemorrhage, necrosis, and few remnants of chorionic villi pointed by black arrow in diagram A and B (x4 hpf) on Hematoxylin and Eosin stains.

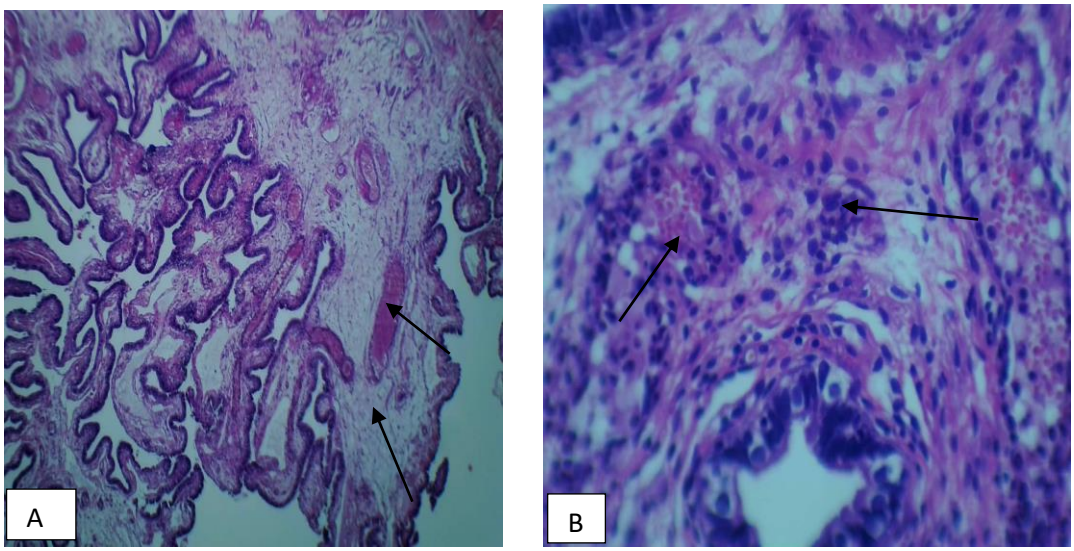

Figure 3: Left fallopian tube: Section showing area of edematous stroma, congested vessels with accumulation of inflammatory cells pointed by black arrows on hematoxylin and eosin stain (x10 hpf in diagram A and (x40 hpf in diagram B).

Discussion

The incidence of bilateral ectopic pregnancy is reported to be 1/1,589 ectopic pregnancies (2). The cause of ectopic pregnancy is not known however, transperitoneal migration of zygote, abnormal conceptus, hormonal factors which influence tubal motility and anatomic obstruction are among commonest theories explaining blastocyst implantation outside the endometrial cavity (5). Half of women with ectopic pregnancy, the risk cannot be identified (6). Our patient had a history of being treated for acute pelvic inflammatory disease (PID) one-month prior to laparotomy. PID was further evidenced by the presence of chronic salpingitis on the left tube after histopathological studies (Figure 3). Approximately half of women have identifiable risk factors for ectopic pregnancy such as a prior history of ectopic pregnancy, which increases the risk to 10% and goes as high as 25% with two or more ectopic pregnancies (6). Interestingly, despite clinical suspicion, hematosalpinx may be related to either ectopic gestation or salpingitis due to PID. Other risk factors for ectopic gestation are tubal surgery, adhesions due to other pelvic surgeries, use of assisted reproductive technology, smoking, age greater than 35years, intrauterine device (IUD) users, and use of ovulation induction drugs are among common reported risks (5–7).

The diagnosis of extrauterine pregnancy is challenging because its symptoms are nonspecific (5,8). Only 30% of patients with ectopic pregnancy present with classic clinical findings of ectopic pregnancy (8). The sensitivity of ultrasound for diagnosis of ectopic pregnancy has been reported to range from 40% to 88%. The sensitivity is further increased to over 90% with transvaginal ultrasound compared to the abdominal-pelvis ultrasound in diagnosis of ectopic gestation (9). However, evaluation of both adnexa preoperatively is of paramount importance because of the possibilities of other adnexa mimicking ectopic pregnancy or, on rare occasions, contralateral ectopic (2,10). In our case, the left adnexa could not be appreciated during ultrasound, thus the diagnosis of hematosalpinx was not suspected preoperatively, which can be explained by the significant hemoperitoneum found. Similar findings were reported in several case reports where neither hematosalpinx nor contralateral ectopic was suspected preoperatively (2,4,11). In one case report, a preoperative diagnosis of bilateral hematosalpinx was made by laparoscopy; however, intraoperative findings revealed she had features suggestive of ectopic pregnancy on one side and hematosalpinx on the contralateral side (12).

Management of ruptured ectopic pregnancy beyond repair is salpingectomy (13). When complicated with contralateral hematosalpinx, poses management challenges because the possibilities of unruptured ectopic pregnancy, though rare, cannot be ruled out (12). The diagnosis of bilateral ectopic pregnancy is mostly made retrospectively, often following the

histological evaluation of the fallopian tube where there must be the presence of chorionic villous in both tubes based on Norris criteria (4). In our case, the right tube was ruptured beyond repair with the left tube intact but swollen with hematosalpinx on aspiration, despite intraoperatively the possibilities of unruptured ectopic pregnancy could not be ruled out (Figure 1). Different management approaches have been proposed ranging from salpingectomy, salpingostomy, use of methotrexate for unruptured side (11,14). In our case, the decision to perform a bilateral salpingectomy was guided by tubal abnormalities and absence of fertility desire. This is supported by other studies (15,16). However, salpingostomy is another option which seems attractive with fertility reported to be as high as 70% and the risk of ectopic pregnancy in subsequent pregnancy being as high as 10%. Despite the increased risk of ectopic pregnancy in subsequent pregnancy; it has further been reported that there is similar success in achieving intrauterine pregnancy with other surgical approaches (17). In our case the left fallopian tube which clinically showed hematosalpinx had evidence of chronic salpingitis (figure 3) after histopathological studies thus the fertility benefit was questionable with available literature recommending salpingectomy being a treatment option in cases with chronic salpingitis. Prophylactic salpingectomy to the contralateral abnormal tube prevents unnecessary life-threatening ectopic pregnancy in the future (18).

A ruptured ectopic pregnancy complicated by contralateral hematosalpinx is difficult to managesince hematosalpinx may be related to both ectopic gestation and pelvic inflammatory disease (PID). Despite intraoperative difficult decision-making about the best treatment options in the case of a suspected bilateral ectopic pregnancy, future fertility desires should guide clinicians on the best treatment options and minimize unnecessary interventions. However, this should be done with caution, especially in areas with limited resources and access to pathology, labs, and radiology.

Conclusion

Management of a unilaterally ruptured ectopic pregnancy complicated by contralateral hematosalpinx should be individualized and tailored towards patient specific needs related to their future fertility goals and patient safety.

Declarations

Patient perspective

The care provided was timely with full explanation of the diagnosis and follow up plan.

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Authors contributions

OA- evaluated the patient before surgery, performed the surgery, and wrote the initial drafts of the manuscript; DM- reviewed several drafts of the manuscript; KJ-participated in evaluation of the patient, surgery and postoperative management; KJ-participated in managing the patient post-surgery; GM-participated in managing the patient post-surgery and follow up of histology results; OO- did the histological studies of the slides for both fallopian tubes; FM-participated in managing the patient post-surgery; EN was responsible for the supervision of management of the patient, did several reviews of manuscript; RK-involved in the management of the patient and contributed in discussion of the case. All authors read and approved the final version of the manuscript.

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Ethic approval, consent to participate and publish

Written informed consent was obtained from the patient for publication of this case and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal. Additionally, consent was sought and granted by the Catholic University of Health and Allied Sciences Directorate of Research and Publication to publish this work. A copy of the clearance document is also available for review by the Editor-in-Chief of this journal.

Competing interest

Author declares that they have no competing interest.

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