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Case Report

Massive haemoperitoneum with lifesaving autotransfusion following ruptured ectopic pregnancy in a low-resource setting: a case report

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ABSTRACT

Ectopic pregnancy is a potentially life-threatening obstetric emergency characterised by implantation of the fertilised ovum outside of the uterine cavity. It remains a leading cause of maternal morbidity and mortality. Ruptured ectopic pregnancy can cause massive intra-abdominal bleeding requiring urgent surgery. Survival after a very large haemoperitoneum is rare, especially in low-resource settings where rapid resuscitation and surgical care may be limited. This case is being reported due to the massive haemorrhage and the good outcome. We report the case of a 27-year-old woman who presented with symptoms suggestive of early pregnancy and severe anaemia. Transvaginal ultrasound revealed a normal non-gravid uterus with no intrauterine gestational sac and a complex left adnexal mass. There was significant intraperitoneal fluid extending to the pouch of Douglas and Morrison's pouch, suggesting haemoperitoneum exceeding 1500 ml. The patient subsequently deteriorated and was diagnosed with a ruptured left tubal ectopic pregnancy. Emergency laparotomy revealed approximately 6.5 litres of haemoperitoneum and a ruptured left ampullary ectopic pregnancy. Left total salpingectomy was performed, and autotransfusion of 5 litres was carried out. Postoperative management included intravenous fluids, antibiotics, analgesics, and close monitoring. Massive haemoperitoneum resulting from ruptured ectopic pregnancy is associated with a high risk of hypovolemic shock and maternal mortality, particularly in settings where diagnosis and intervention may be delayed. Most reported cases involve smaller volumes of intraperitoneal bleeding, as patients often deteriorate before such extensive blood loss occurs. The survival of this patient despite massive haemoperitoneum is therefore remarkable. This outcome underscores the critical role of early recognition, rapid resuscitation, and prompt surgical intervention in the management of ruptured ectopic pregnancy. It also highlights the potential benefit of supportive measures such as blood transfusion and autotransfusion in managing severe haemorrhage. Reporting such rare survivals contributes to the existing literature by demonstrating that favourable outcomes are achievable even in extreme presentations when timely and appropriate management is instituted. This case highlights the importance of early diagnosis and prompt surgical management of ectopic pregnancy to prevent life-threatening complications. Strengthening early pregnancy evaluation and improving access to ultrasound services can significantly reduce maternal morbidity and mortality associated with ruptured ectopic pregnancy.

Keywords: Ectopic pregnancy, Life-threatening obstetric emergency, Massive haemoperitoneum

INTRODUCTION

Ectopic pregnancy refers to the implantation of the fertilized ovum outside of the uterine cavity.[1] The fallopian tube is the most common site, accounting for about 95% of cases, with the ampullary region being the most frequent location.[1] Other rare implantation sites include the ovary, cervix, abdomen, and interstitial region of the uterus.[1] Ectopic pregnancy represents approximately 1–2% of all pregnancies and remains a significant cause of maternal morbidity and mortality worldwide.[2] In early pregnancy, a normal gestation should implant within the uterine cavity,

where adequate vascular support exists for fetal development.[2] However, when implantation occurs in the fallopian tube or other extrauterine sites, the surrounding tissue is unable to accommodate the growing trophoblastic tissue.[3] This often results in rupture of the ectopic gestation, causing intra-abdominal haemorrhage and potentially life-threatening haemoperitoneum.[3]

Globally, ruptured ectopic pregnancy is one of the leading causes of maternal death in the first trimester.[4] The condition may present with a variety of symptoms, including abdominal pain, amenorrhea, vaginal bleeding, dizziness, and syncope. In severe cases, patients may present with hypovolemic shock due to internal bleeding.[4] Early diagnosis is therefore crucial in preventing complications.

Several risk factors have been identified for ectopic pregnancy, including pelvic inflammatory disease, prior tubal surgery, previous ectopic pregnancy, assisted reproductive technologies, intrauterine contraceptive device use, and smoking.[4] However, ectopic pregnancy may also occur in women without identifiable risk factors.

Management of ectopic pregnancy depends on the clinical status of the patient, gestational age, and site of implantation. Options include expectant management, medical therapy with methotrexate, or surgical intervention. In cases of rupture or hemodynamic instability, emergency open laparotomy is often required, especially in low-resource settings.[5]

This case report describes a ruptured left tubal ectopic pregnancy associated with massive haemoperitoneum managed by emergency laparotomy in a resource-limited setting.

CASE REPORT

A 27-year-old para 2 woman presented to our medical facility with complaints of lower abdominal pain. There were associated dizziness and weakness, but no fainting spells. She had a positive pregnancy test and was estimated to be approximately nine weeks pregnant based on her last menstrual period.

The patient was noted to be pale and clinically dehydrated on examination. The laboratory evaluation revealed severe anaemia with a packed cell volume (PCV) of approximately 12%. Due to her unstable condition, she received two pints of blood transfusion while further evaluation was carried out.

Bedside transvaginal ultrasonography was performed to assess the pregnancy. The scan demonstrated a normal-sized non-gravid anteverted uterus measuring approximately 8.3×5.3×6.1 cm with an endometrial thickness of 9 mm and uniform myometrium. Importantly, no intrauterine gestational sac was visualised. There was a complex left adnexal mass measuring about 4.7×5.4×4.0 cm with both cystic and solid components. Doppler imaging showed markedly increased vascularity in the solid components, producing a “ring of fire” appearance, which is highly suggestive of ectopic pregnancy. In addition, there was moderate perilesional fluid collection extending into the pouch of Douglas and proximally into the abdomen. The fluid reached Morrison’s pouch with a perpendicular height of approximately 19.5 mm, indicating a large volume of intraperitoneal fluid estimated to exceed 1500 ml. The right ovary appeared normal in size and configuration, and the urinary bladder was unremarkable.

Based on the ultrasound findings, a diagnosis of left adnexal ruptured ectopic pregnancy with significant haemoperitoneum was made, and emergency laparotomy was done, with intraoperative findings revealing approximately 6.5 litres of haemoperitoneum within the abdominal cavity (Figure 1). A ruptured left ampullary ectopic pregnancy was identified as the source of bleeding. The uterus was found to be non-gravid and normal in appearance, while the right adnexa appeared normal. Surgical management involved left total salpingectomy to remove the ruptured ectopic pregnancy and control bleeding. Autotransfusion of approximately five litres of blood was performed during the procedure (Figure 2) using an improvised autotransfusion set. This was done by first collecting the haemoperitoneum with a sterile container, as seen in Figure 1. This fresh blood free of contaminants was filtered using a sterile mop into a sterile jar, which was then transferred into two sterile 500 ml infusion containers and transfused simultaneously using a blood giving set as seen in Figure 2.

Postoperative management included intravenous fluid resuscitation with 5% dextrose saline, broad-spectrum antibiotics, analgesics and postoperative packed cell volume was 33%. Additional supportive care included monitoring of vital signs, fluid balance charting, and close postoperative observation. The patient recovered satisfactorily following surgery and was subsequently discharged in stable condition.

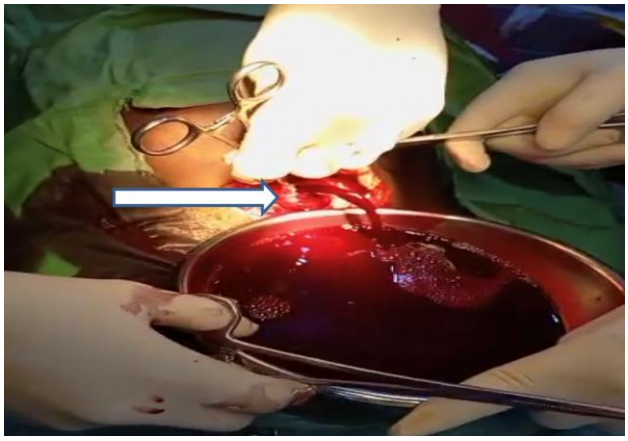

Figure 1: Massive haemoperitoneum with white arrow showing gush of blood from the peritoneal cavity.

Figure 2: An improvised autotransfusion kit in a low-resource setting.

DISCUSSION

Ectopic pregnancy remains one of the most important causes of maternal morbidity and mortality in early pregnancy.[6] Rupture of an ectopic pregnancy can result in rapid intraperitoneal haemorrhage leading to hypovolemic shock and death if not promptly treated.[5] The fallopian tube, particularly the ampullary region, is the most common site of ectopic implantation and rupture. In many cases, rupture occurs between 6 and 10 weeks of gestation, often presenting with abdominal pain, amenorrhea, and signs of internal bleeding as was seen in this patient.

A peculiar feature of this case is the massive haemoperitoneum of approximately 6.5 litres identified during surgery (Figure 1). Such large volumes of intraperitoneal blood loss are rarely documented in the literature because most patients present earlier or deteriorate rapidly before such volumes accumulate. Massive haemoperitoneum significantly increases the risk of hypovolemic shock, multi-organ failure, and death.[7] The survival of this patient despite such extensive blood loss makes this case particularly noteworthy.

Several studies have reported that haemoperitoneum volumes in ruptured ectopic pregnancies typically range between 500 ml and 2000 ml.[8] Larger volumes exceeding 3–4 litres are uncommon and usually associated with severe hemodynamic compromise.[8-10] Survival in cases involving blood loss exceeding 5 litres is rare, particularly in resource-limited environments where delays in diagnosis and limited access to blood products may worsen outcomes.

The present case demonstrates that favourable outcomes can still be achieved with rapid clinical recognition, timely surgical intervention, and aggressive resuscitation. In this patient, a prompt bedside ultrasound diagnosis showing an empty uterus, adnexal mass, and large intraperitoneal fluid collection facilitated early surgical decision-making. Emergency laparotomy allowed rapid evacuation of the 6.5 litres haemoperitoneum and definitive treatment through salpingectomy. Another factor that likely contributed to the patient's survival was the use of autotransfusion of 5 litres, which is a valuable technique in settings where blood availability may be limited (Figure 2). Autotransfusion allows the collection and reinfusion of the patient's own blood from the peritoneal cavity, thereby helping to restore circulating blood volume.

In low-resource settings, ruptured ectopic pregnancy continues to present late due to delayed health-seeking behaviour, limited diagnostic facilities, and restricted access to emergency obstetric care. Consequently, many patients present with severe anaemia and hemodynamic instability. Despite these challenges, this case demonstrates that survival is possible even in extreme presentations when timely surgical intervention and adequate resuscitation are provided.

Therefore, this case is reported primarily because of the patient's survival despite massive haemoperitoneum, highlighting both the severity of ruptured ectopic pregnancy and the effectiveness of prompt multidisciplinary management.

CONCLUSION

Ruptured ectopic pregnancy remains a life-threatening obstetric emergency that can result in massive intra-abdominal haemorrhage and rapid hemodynamic compromise. This case highlights a rare survival despite an estimated 6.5 liters of haemoperitoneum following rupture of a left tubal ectopic pregnancy. Prompt diagnosis with ultrasound, rapid surgical intervention, and aggressive resuscitation, including blood transfusion, were crucial to the favourable outcome. Early recognition and timely management are essential to reducing morbidity and mortality associated with ectopic pregnancy.

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