

Acute Ruptured Ectopic Pregnancy: A Comparative Study between Salpingectomy without Mopping and Salpingectomy with Mopping

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ABSTRACT

Introduction: Acute ruptured ectopic pregnancy represents a serious hazard to women's health and their reproductive potential requiring prompt recognition and aggressive intervention. Study aimed to compare the results of salpingectomy done without mopping and intraperitoneal drain; and salpingectomy done with mopping and intraperitoneal drain in cases of acute ruptured ectopic pregnancy.

Material and Methods: The comparative study has been done at Department of Obstetrics and Gynaecology, DMCH, from October 2013 to April 2015. Total of 53 patients were included; 33 in the study group and 20 in the control group. In all 53 patients, resuscitation and treatment were done simultaneously. In the study group, salpingectomy was done, clots were removed and blood was left in the peritoneal cavity intentionally (No mopping and no drain). In the control group, salpingectomy was done, clots were removed, mopping was done and intraperitoneal drain was given.

Results: In the study group, less blood loss occurred (as blood was left in the peritoneal cavity) and also post operative haemoglobin was 1-1.5 gm% more in the study group than the control group (after adjusting for number of blood transfusions).

Conclusion: In cases of acute ruptured ectopic pregnancy, laparotomy done without mopping and drain should be considered as the preferred method over laparotomy done with mopping and drain.

Key words: Ruptured Ectopic Pregnancy, Salpingectomy, Mopping.

INTRODUCTION

Acute ruptured ectopic pregnancy may be fatal if it is not treated promptly with resuscitation, surgical intervention and blood transfusion. In the peripheral resource-poor hospitals where availability of donor blood is scarce and blood transfusion services are limited, patients with acute ruptured ectopic pregnancy frequently present in poor clinical condition. Even if blood is available for transfusion, it is always better to return patient's own blood to the circulation than to transfuse homologous blood, as blood transfusion is not free of complications.

Existence of stomata in the diaphragmatic peritoneum have been proved by many studies¹⁻¹⁰. It is also shown by various studies that fluid, cells and particles get absorbed from the peritoneal cavity through the peritoneal stomata, lymphatic drainage units and subperitoneal terminal lymphatics^{11,12,13}. It has been also shown that free blood within the peritoneal cavity get absorbed through the stomata to reach the subperitoneal lymphatic lacunae^{5,14-20}. In fact, the

peritoneal lymphatic stomata have been used successfully in the treatment of Rh haemolytic fetus during intrauterine intraperitoneal blood transfusion²¹⁻²⁶.

This study aimed to evaluate the efficacy and safety of leaving blood within the peritoneal cavity during laparotomy for acute ruptured ectopic pregnancy, and also, to compare its outcome with laparotomy for acute ruptured ectopic pregnancy done with mopping and drain (without leaving blood inside the peritoneal cavity).

MATERIAL AND METHODS

The comparative study was done at Department of Obstetrics and Gynaecology, Darbhanga Medical College and Hospital(DMCH),Laheriasarai, from October 2013 to April 2015. Total of 53 patients of acute ruptured ectopic pregnancy, presenting with hemoperitoneum and unstable vitals, were included; 33 patients were in the study group and 20 patients were in the control group. In all the 53 patients, resuscitation and treatment were done simultaneously. In the Study group during laparotomy, salpingectomy done and hemostasis was secured. Before closing the abdomen, only clots were removed and blood was left in the peritoneal cavity as such and abdomen was closed in layers. No intraperitoneal drain was used (No mopping and No drain). In the Control group during laparotomy, salpingectomy done and after securing hemostasis, clots were removed and blood was suctioned. Intraperitoneal abdominal drain given and abdomen was closed in layers.

Both the study group and the control group were followed for the pre operative haemoglobin level, number of blood transfusion required, haemoglobin on 3rd post operative day, any post operative complications like fever or infection, recovery period and duration of hospitalisation, and mortality. In long term follow up, the study group was followed for any complain significant to point towards intraperitoneal adhesion and intestinal obstruction.

RESULTS

Table 1 shows the compiled results we have found in our

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	Mean pre operative Hb gm/dl	Mean number of BT	Mean post operative Hb gm/dl	Sepsis/ Infection	Mortality	Beta hCG
Study group n= 33	4.57	2.1	8.45	Nil	Nil	Negative within deaws few days
Control group n=20	4.56	3.4	8.57	Nil	1 (BT reaction)	Negative within ayfew few days

Table-1:

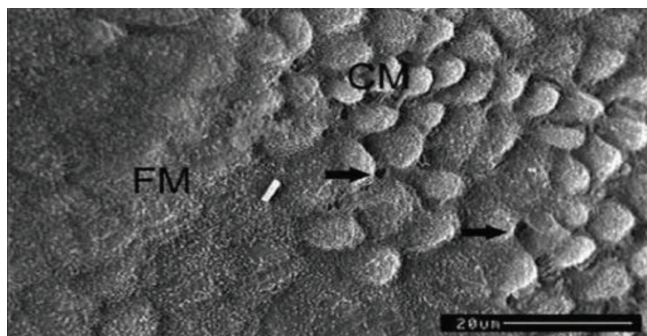


Figure-1: Scanning electron microscope showing flat mesothelial cells (FM) and cubic mesothelial cells (CM) and arrows showing round and oval lymphatic stomata

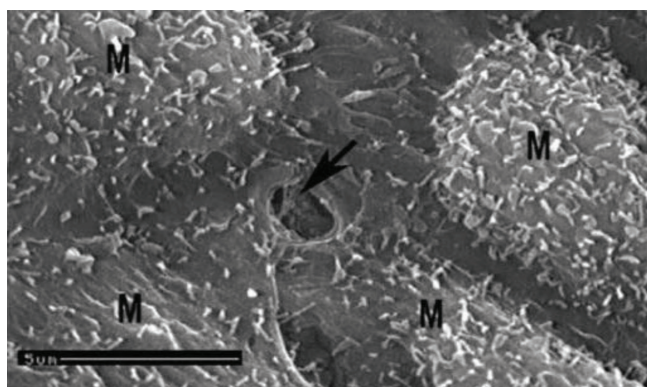


Figure-2: Scanning electron microscopic view showing stomata (arrow) at the junction of four mesothelial cells (M) and endothelial cell processes crossing the space below the lymphatic stomata.

study. The mean pre operative haemoglobin in the study group and the control group were 4.57gm/dl and 4.56gm/dl respectively. In the study group, the mean number of blood transfusion done was 2.1 whereas in the control group the mean number of blood transfusion done was 3.4. The haemoglobin on 3rd day post operative day was 8.45gm/dl and 8.57gm/dl in the study group and in the control group respectively. None of the patient had infection or sepsis in either of the group. One mortality occurred in the control group because of blood transfusion reaction. Beta hCG became negative within a few days in both the groups. All of the patients in the study group were having soft abdomen on the 3rd postoperative day and were discharged on 5th post operative day. 19 patients in the control group were also discharged on the 5th post operative day but one patient in the control group died because of blood transfusion reaction. The patients in the study group were also followed for any complain pointing towards intraperitoneal adhesion like intestinal obstruction; but none of the patients complained of

any problem during the study period (Oct 2013 - April 2015).

DISCUSSION

The study was conducted at the department of obstetrics and gynecology at Darbhanga Medical College and Hospital, Laheriasarai, from October 2013 to April 2015. Total of 53 patients, presenting with acute ruptured ectopic pregnancy, were included in the study. Out of 53 patients, 33 patients were included in the study group and 20 patients were in the control group. The main objective of the study was to know the safety and efficacy of leaving blood within the peritoneal cavity and also to compare its outcome with the conventional method (salpingectomy with mopping and drain). The basis of the study was peritoneal lymphatic stomata, distributed extensively, mainly on the diaphragmatic surface (1863, Von Recklinghausen¹; 1977, Tsilibary and Wissig³; 1990, Fukuo et al⁴; 1991, Li and Yu⁵; 1991, Negrini et al⁶). Von Recklinghausen¹ in 1863 discovered stomata like structure on the surface of mouse peritoneum with the help of silver nitrate staining. Tsilibary and Wissig³ in 1977 showed the existence of peritoneal lymphatic stomata by electron microscopy. Li and Yu⁵ in 1991 found lymphatic stomata in human diaphragmatic peritoneum. The lymphatic stomata had been associated with dissemination of infectious microbes in the peritoneal cavity (Leak and Rahil, 1978)¹³. Many studies have reported that India ink injected into the peritoneal cavity of living animals caused dark stain of subperitoneal lymphatic vessels, that is, India ink could get absorbed into the lymphatic capillaries (Tsilibary and Wissig, 1987¹⁷; Oya et al, 1993¹⁹). Li and Yu in 1991⁵ showed that trypan blue and mouse red blood cells were absorbed by subperitoneal lymphatic vessels via lymphatic stomata, when injected intraperitoneally. Clinically, stomata and subjacent lymphatic lacunae (a triple layered structure consisting of mesothelium, fenestrated basement membrane and endothelium) could provide access for blood transfusion^{20,22}. M F Abu-Hijleh, O A Habbal, S T Moqattash had described the electron microscopic view of stomata²⁰ (The role of the diaphragm in lymphatic absorption from the peritoneal cavity) in 1995. The submesothelial connective tissue is interrupted at the site of stoma. Along the margin, stomata, mesothelial and endothelial cells are joined to one another and form a channel which leads from the peritoneal cavity into the lumen of the lacunae^{17,20,22}. Figure 1 and figure 2 are taken from Recent Advances in the Research of Lymphatic Stomata in 2010²². Figure 1 shows that under scanning electron microscope the serous membranes are covered with two types of mesothelial cells – flat and cubic. Flat mesothelial cells are of large volume

with long and conferted microvilli causing tight connections between cells without lymphatic stomata. Cubic mesothelial cells are having smaller volume with paving stone like appearance and have short and rarefactive microvilli. The cytoplasmic bridges of these consecutive cells connect to form round or oval stomata.

Sometimes microvilli and cytoplasmic bridges can stretch over the lymphatic stomata (Fig 2).

In fact, the peritoneal lymphatic stomata are being used successfully in intrauterine intraperitoneal blood transfusion in the therapy of Rh haemolytic fetus^{23,25,26}. Thus, it concludes that intraperitoneal transfused blood acts as slowly given intravenous blood transfusion in fetus. This made the basis of our study as we also tried to return patients own blood into her circulation by leaving blood within the peritoneal cavity. In the results we found that the mean pre operative haemoglobin were 4.57 gm/dl and 4.56 gm/dl in the study group and in the control group respectively. In the study group, the mean number of blood transfusion done was 2.1 whereas in the control group the mean number of blood transfusion done was 3.4. The haemoglobin on 3rd day post operative day was 8.45gm/dl and 8.57gm/dl in the study group and in the control group respectively. Thus, we found that there was no any significant difference between the mean pre operative haemoglobin and mean post operative haemoglobin of the study group and the control group. But the mean number of blood transfusion required was less in the study group (2.1) than the control group (3.4). Thus, it concludes that the blood left in the peritoneal cavity, in the study group, got absorbed and, thus, decreased the need for blood transfusion. Also the patients in the study group were having no any post operative complications like infection or sepsis and all the patients were having soft abdomen by the 3rd post operative day. The patients in the study group were discharged on the 5th post operative day and there was no mortality. In the control group also, the post operative period was uneventful, except, for the one mortality which occurred due to blood transfusion reaction. 19 patients of the control group were also discharged on the 5th post operative day. The patients in the study group were also followed for any complications, especially indicating intraperitoneal adhesion like intestinal obstruction, but none of the patients turned up with such complaints during the study period.

CONCLUSION

Acute ruptured ectopic pregnancy is a life threatening condition in the 1st trimester of pregnancy. Prompt recognition and early aggressive intervention along with blood transfusion is needed for saving life. Blood transfusion is a problem in the peripheral resource poor hospitals. Also, blood transfusion is never free of complications. So, it is better to return patients own blood into her circulation. In our study, in the study group, blood left in the peritoneal cavity, got absorbed, and thus, decreased the need of blood transfusion, as compared to control group. Also, there were no any post operative complication, either in short term (like infection or sepsis) or in long term (intestinal obstruction).

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