



បណ្ឌិតជាតិគាំពារមាតា និងទារក
National Maternal and Child Health Center

វិភាគស្រាវជ្រាវ សម្ភព និងរោគគ្រុឌ លើកទី៤

ប្រធានបទ៖ «រួមគ្នាបង្កើនគុណភាពសេវាព្យាបាល ថែទាំ និងសង្គ្រោះមាតា និងទារក »

Comparative Analysis of Laparoscopic Versus Mini-laparotomy Approaches in the Treatment of Ectopic Pregnancy at NMCHC



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Objectives:

To provide descriptive retrospective study of patients underwent laparoscopy and mini-laparotomy for ectopic pregnancy at the Maternity- gynecology ward from 1st January, to 31st December, 2024 at NMCHC.

Contents:

1. Introduction
2. Material and Methods
3. results
4. Discussion
5. Conclusion and recommendations

Introduction



Introduction

- An ectopic pregnancy is when a fertilized egg implants itself outside of the uterus, usually in the fallopian tube.
- Site of an ectopic pregnancy: Cornual, Fallopian tube, Ovary, Cervix, Cesarean scar, or abdominal cavity.
- An ectopic pregnancy is a threat to a woman's life, and it compromises later pregnancy.
- The incidence of ectopic pregnancy has been on the increase: 6 folds in the US and 4 folds in the UK.
- The current incidence of ectopic pregnancy is 1%-2% of reported pregnancies.

Introduction

- The open laparotomy is the classical surgical approach in the management of an ectopic pregnancy.
- Laparoscopy has been used in the diagnosis of ectopic pregnancy for many years. Bruhat MA, and his team performed laparoscopic excision of the tube in 1973 and conservative management of ectopic pregnancy in 1980.
- Mini-laparotomy is safe and feasible in instances where there is a tubal rupture and hemoperitoneum, provided that the patient is haemodynamically stable.

Introduction

- An ectopic pregnancy can be diagnosed with clinical signs, serum Beta-HCG assay, and high resolution sonography.
- In the past, laparotomy salpingectomy was a norm.
- Recent development in treatment of ectopic pregnancy has sifted from saving the mother's life to saving the woman's fertility.
- The purposes of this study is to compare the outcome of laparoscopic surgery with mini-laparotomy in the management of ectopic pregnancies in our hospital.

Material and Methods

- A retrospective descriptive study of 29 patients diagnosed with ectopic pregnancy admitted at NMCHC from 1st January, 2024 to 31st December, 2024 was conducted.
- 20 patients were treated laparoscopically, and 9 patients were under mini-laparotomy surgery.
- Descriptive statistic was used to analyse the data.
- The variables including age, previous surgery, parity, BMI, hemoglobin assay, operation time, blood loss (estimated blood in abdominal cavity and from the procedure) and length of hospital stay were taken from hospital medical electronic record and the patients' documents.

Material and Methods

Inclusion Criteria:

- Women diagnosed with ectopic pregnancy.
- Women who underwent either laparoscopic or mini-laparotomy surgery.
- Patients aged 18 years and above.
- Patients with complete medical reports.

Exclusion Criteria:

- Patients treated medically or expectantly for ectopic pregnancy.
- Patients with contraindications for either surgical approach
- Patients with conventional laparotomy.

Results

Laparoscopic procedure

- Under general anesthesia and in Trendelenburg position, laparoscopic procedures were performed through a 5mm-telescopic port at the upper umbilical crease and two 5 mm- left ipsi lateral ports.
- Salpingectomy is performed step-wise using bipolar forceps to desiccate the mesosalpinx and scissors to cut along the mesosalpinx and across the proximal tube.
- The 5mm lateral port wound was enlarged and replaced with 10mm port for removal of surgical specimens.
- The pelvis was irrigated with saline and aspirated.
- A drain in the Douglas pouch was put in place if necessary.

Results

Laparoscopic procedure

- The side ports were removed under telescopic vision and the 10-mm side-port wound was closed
- The skin wound for 5-mm port wound were closed using Nylon No.2.0

Results

Mini-laparotomy procedure

- Under spinal anesthesia and in supine position, patients in the mini-laparotomy group underwent surgery via a 3-4 centimeter incision in the lower abdomen.
- Two small retractors are used to well present the operation field.
- The blood was aspirated and blot clots were removed. A standard surgical gauge piece is inserted to soak up blood and wrap the intestines, presenting the ectopic site.
- A round forceps is employed to grasp the annex with ectopic pregnancy, and a standard open surgical techniques were followed meticulously to manage the ectopic pregnancy.

Results

Table1: Number of patients

Number of patients	Laparoscopy	Mini-laparotomy
	20	9

Results

Table2: Previous surgery

Previous surgery	Laparoscopy	Mini-laparotomy
One previous C-section	2	1
Two previous C-section	1	1
Ectopic pregnancy	1	0

Results

Table3:Parity

Parity	Mean	Median	Mode
Laparoscopy	1.9	2	2
Mini-laparotomy	1.5	1	1

Results

Table 4: Age

Age in years	Mean	Median	Mode
Laparoscopy	30.9	28	28
Mini-laparotomy	31.4	27	24

Results

Table 5: BMI

MBI	Mean	Median	mode
Laparoscopy	22.45	22.41	21.68
Mini-laparotomy	20.3	20.31	18.75

Results

Table 6: Hemoglobin

Hemoglobin g/dl	Mean	Median	Mode
Laparoscopy	11.6	11.6	12
Mini-laparotomy	10.77	11.50	11

Results

Table 7: Operation time

Operation time	Mean	Median	Mode
Laparoscopy	72.5 mn	65 mn	70 mn
Mini-laparotomy	63.3 mn	60 mn	60 mn

Results

Table 8: Blood loss

(Existing blood in abdomen and blood from procedure)

Blood loss	Mean	Median	Mode
Laparoscopy	105.5 ml	75 ml	100 ml
Mini-laparotomy	427.7 ml	250 ml	250 ml

Results

Table 9: Blood transfusion

Blood transfusion	Laparotomy	Mini-laparotomy
Number of patients	1	1
Number of bags	2	3

Results

Table 10: Length of hospital stay(post operation)

Length of hospital stay in days	Mean	Median	Mode
Laparoscopy	4	3.5	3
Mini-laparotomy	5.4	6	6

Discussion

Metric	Laparoscopic	Mini-laparotomy
Incision size	Multiple small keyhole 5-10 cm	Small incision 3 cm
Hospital stay	4 days	5.4 days
Postoperative pain	Minimal, less pain	Longer discomfort
Recovery time	Faster return to normal activities 1-2 weeks	Longer convalescence period up to 4 weeks
Complication	Lower risk of wound infection	Lower risk of intra abdominal organ injury
Cost	More expensive	More affordable
Resources	Required specialized equipment and highly trained surgical teams	Uses standard open surgical instruments

Metric	Laparoscopic salpingectomy	Mini-laparotomy salpingectomy
Blood loss	Less (105.5 ml)	More (427.7 ml)
Anesthesia	General with intubation	Spinal
Exploratory Vision	Better	Limited

Operation Time

Mean of Operation Time	MCH 2024	India Duggal BS, et al. 2011	Taiwan Ding Dah-Ching, et al. 2008
	72.5 mn	70 mn	73.2 mn

Length of Hospital Stay

Hospital stay	NMCHC 2024	India Duggal BS, et al. 2011	Taiwan Ding Dah-Ching, et al. 2008
Mean	4 days	2 days	2.7 days

Mini-laparotomy

Institution	NMCHC	India	Canada
Incision size	3 cm	5 cm	5cm
Mean of operation time	63.3 mn	38 mn	49.3 mn
Mean of Hospital stay	5.4 days	3.4 days	3 days

Conclusion

- Laparoscopy and mini-laparotomy are safe and feasible procedure in instances where there is a tubal rupture and hemoperitoneum, provided that the patient is not haemodynamically compromised .
- These procedures are convenience to the patients as the wounds are cosmetically small. They reduce the length of hospital stay, the use of antibiotics and analgesics.
- However, the cost of installation of endoscopic setup and instrumentation is high, and proper maintenance and software update are required. Also, the learning curve for laparoscopy is high and proper training is required.
- Mini-laparotomy required standard surgical instrumentations, with some training any gynecologic surgeon can perform the surgery.

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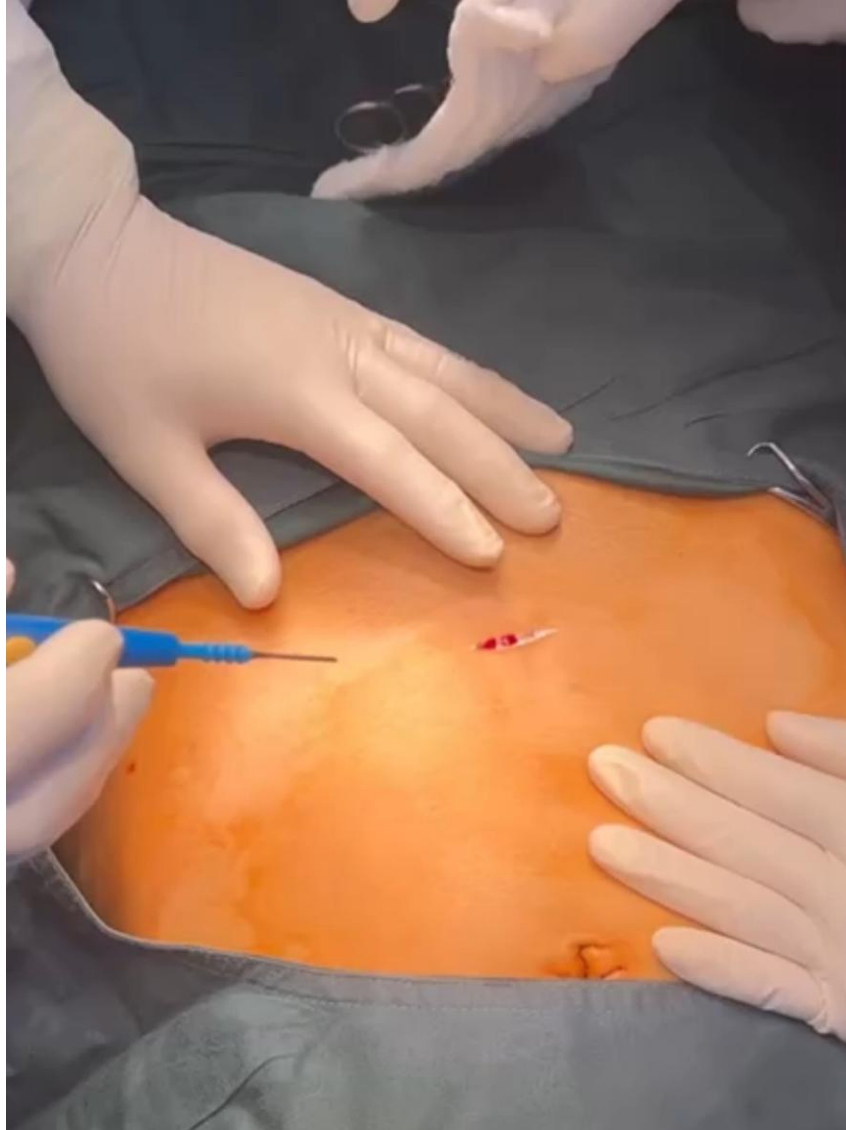
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Video of Laparoscopic management of Ectopic pregnancy



Video of Mini-Laparotomy for Ectopic pregnancy



Thank You!