

Interstitial Pregnancy: A practical guide from suspicion to resolution by minimally invasive surgical approach

Dr Sally Cash¹, Dr Michelle Van¹, Dr Maria-Elisabeth Smet^{2,3}, Dr Nargis Noori^{1,4}

INTRODUCTION

Interstitial pregnancy constitutes 2-4% of all ectopic pregnancies¹. As the implantation site is enveloped by myometrium, in the proximal intramural part of the fallopian tube, the ectopic has the potential to grow larger and present later than standard ectopic pregnancies². It is therefore associated with a higher rate of maternal morbidity and mortality. Traditionally, surgical treatment of interstitial pregnancy included hysterectomy or cornual resection by laparotomy. There has recently been an increase in minimally invasive approaches such as cornuostomy or wedge resection via laparoscopy which are associated with better outcomes for patients³. This benefit is improved with timely, expert ultrasound diagnosis which allows for appropriate management planning.

AIMS & METHODS

To review cases of interstitial pregnancy managed surgically and identify the methods and criteria for ultrasound diagnosis, the different surgical methods employed and factors which were associated with successful primary treatment.

A retrospective case series was performed at two tertiary hospitals in NSW from January 2013 to December 2022. From a database of emergency gynaecology cases, 593 cases were considered using a key word search for “interstitial, cornual, ectopic, wedge, cornuostomy, salpingectomy”. Only those with the inclusion criteria of interstitial ectopic pregnancy identified at time of surgery were included in the descriptive analysis of results.

RESULTS

16 cases of surgically managed interstitial pregnancy were identified, all which achieved the primary outcome with successful treatment through a single surgery. One case required conversion to laparotomy, 3 were managed only with laparotomy and 4 cases required admission to higher levels of care post-surgery for haemodynamic instability. 4 cases required blood transfusions. None required a hysterectomy or resulted in mortality. 5 cases had clinical suspicion for interstitial pregnancy at initial ultrasound imaging and all of these proceeded to have tertiary level ultrasound scans and planned surgical laparoscopic procedures. Of these five, none required a blood transfusion and were discharged home on average 1.2 days post operatively. This demonstrated better surgical outcomes compared to a 66.6% admission to higher level of care following laparotomy with multiple blood transfusions.

DISCUSSION

Timely diagnosis is the key to successful management of patients with interstitial ectopic pregnancy due to high risk of maternal morbidity and mortality. The advancement and availability of expert, tertiary gynaecological ultrasound imaging (including 3D imaging) assists with management planning, allowing for earlier diagnosis and reducing the incidence of late presentation which is often complicated by haemoperitoneum and haemodynamic instability. Furthermore, developments in surgical techniques have allowed for the introduction of minimally invasive surgical options which have reduced the risk of intra-operative complications, reduced blood loss and improved patient recovery.

The main limitations of this study were the small number of cases and retrospective design. The use of tertiary ultrasound for diagnosis and surgical management is dependent on resources available, timely patient presentations and expertise of the treating surgeon.

Future research is recommended for the ongoing use of tertiary level scans to better identify and surgically plan for interstitial ectopic pregnancy in order to continue to improve outcomes for patients.

REFERENCES

1. Varun, N., Nigam, A., Elahi, A. A., & Jain, A. (2018). Cornual ectopic pregnancy: laparoscopic management step by step. *BMJ Case Reports*; bcr-2017-223998. doi: 10.1136/bcr-2017-223998
2. Lau, S. & Tulandi T. (1999). Conservative medical and surgical management of interstitial ectopic pregnancy. *Fertil Steril.* 72:207–215
3. Warda, H., Mamik, M, M., Ashraf, M. & Abuzeid, M, I. (2014). Interstitial ectopic pregnancy: conservative surgical management. *Journal of The Society of Laparoscopic & Robotic Surgeons.* Apr-Jun;18(2):197-203. doi: 10.4293/108680813X13753907292836.

Affiliations:

1. Department of Obstetrics and Gynaecology, Westmead Hospital
2. Westmead Institute of Maternal Fetal Medicine
3. Sydney Ultrasound for Women, Chatswood
4. Sydney West Advanced Pelvic Surgery Unit

