# Performing a Laparoscopic Appendectomy for an Acute Appendicitis in the Third Trimester of Pregnancy

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**Aim:**

- To describe a case of a pregnant lady who presented with acute appendicitis in the 3rd trimester and was managed with Laparoscopic appendectomy and made a very good recovery.

**Background:**

- Acute appendicitis is the most common general surgical problem during pregnancy and studies report an incidence ranging from 1 in 500 to 1 in 2000 pregnancies [1].
- The diagnosis is challenging in the pregnant patient and the role of biochemical investigations and imaging is limited [2].
- Delay in diagnosis due to non – classic presentation and misdiagnosis leads to delay in surgical intervention resulting in high maternal morbidity and fetal mortality rates [3].
- Surgical intervention should be prompt in strongly suspicious cases [3].
- As for the operative technique, laparoscopic appendectomy is advocated in the first 2 trimesters, however, in the third trimester the guidelines are unclear [3].

**Case Report:**

- 39 year old primiparous woman who was 31 weeks pregnant presented with acute onset generalised abdominal pain and vomiting. She denied any urinary or bowel symptoms. She had a past medical history of a uterine fibroid. She denied any contact or travel history.
- Observations on admission were stable and she was apyrexial. CTG was normal with no signs of uterine activity. On examination, the abdomen was soft with no signs of peritonism. The patient was reassured and discharged.
- She presented again 8 hours later with a pyrexia of 38.1°C and localised right iliac fossa pain. She was now tachycardic but normotensive. On examination, there was tenderness and localised guarding in the right iliac fossa. On speculum, the cervix was long and os closed.
- Her biochemical investigations were as follows:

| | Patient's Results | Normal Values |
|---|---|---|
| Haemoglobin (g/dL) | 103 | 120-160 |
| Platelets (x$10^9$/L) | 369 | 150-400 |
| White Blood Cell Count (x$10^9$/L) | 30 | 4-11 |
| Neutrophils (%) | 26.2 | 2-7.5 |
| Sodium (mmol/L) | 132 | 135-145 |
| Potassium (mmol/L) | 3.8 | 3.5-5.0 |
| Urea (mmol/L) | 1.3 | 2.5-7.8 |
| Creatinine (µmol/L) | 39 | 40-110 |
| Alanine Transaminase(IU/L) | 24 | 0-45 |
| Bilirubin (µmol/L) | 6 | 2-17 |
| Amylase (U/L) | 63 | 23-85 |
| CRP (mg/dL) | 29.3 | <1 |

- In view of the high clinical suspicion of acute appendicitis, she was assessed by the surgical team who decided to take her to theatres immediately for a diagnostic laparoscopy with or without an appendectomy.
- The operation was successful and images A, B and C depict laparoscopic views of different stages of the operation. The patient made an uneventful recovery and was discharged on Day 3 following the operation.

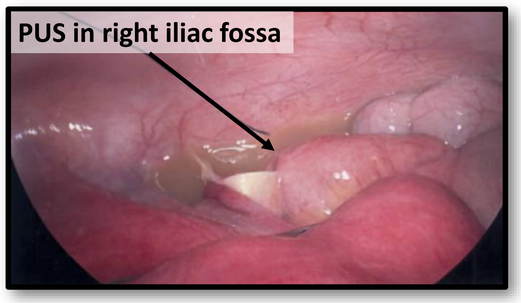



Image A. Laparoscopic view of pus in the abdomen

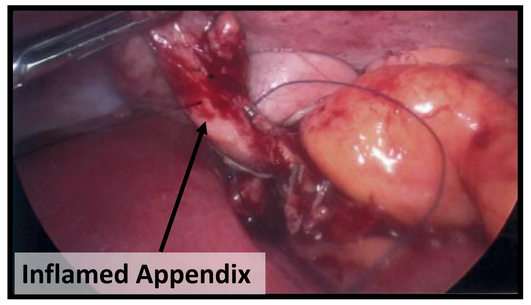



Image B. Laparoscopic view of inflamed appendix

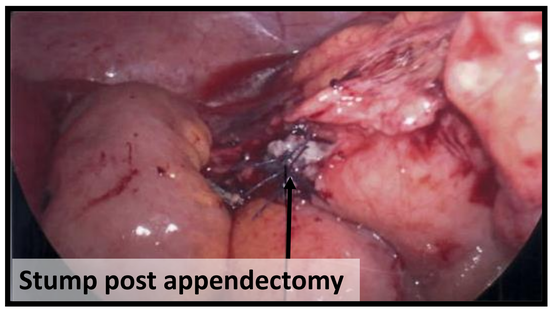



Image C. Laparoscopic view of stump post appendectomy

**Discussion:**

- The use of the laparoscopic approach in the third trimester used to be controversial as studies demonstrated that there was a high conversion rate to open appendectomy and longer operating times that led to severe intraoperative complications [3].
- However, more successful case reports of laparoscopic appendectomies in patients beyond 26 weeks gestation have been published [4].
- Benefits include small incision site, less post-operative pain and quick recovery. Furthermore, laparoscopy subjects the uterus to less manipulation and therefore reduces risk of preterm labour [4,5].
- A systematic review of 637 published cases of laparoscopic appendectomies reported no significant difference in rates of intraoperative complications, fetal demise and premature delivery between the first and third trimester. [6]
- The laparoscopic approach is gaining favour and in keeping with this change in behaviour, the Society of American Gastrointestinal and Endoscopic Surgeons (SAGES) published a set of guidelines in 2017 to aid physicians in the diagnosis and management of surgical conditions in pregnant patients, focusing on the use of laparoscopy [2].

**Conclusion:**

The diagnosis and management of acute appendicitis in a pregnant patient is challenging. Nonetheless, diagnosis should be prompt to allow for timely surgical intervention so as to reduce maternal morbidity and fetal mortality [3]. The literature suggests that the laparoscopic appendectomy approach is a feasible option in all trimesters but more conclusive data from randomised controlled trials is required to confirm its safety and efficacy [1].

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