

MANAGEMENT OF ACUTE APPENDICITIS IN PREGNANCY

Dhananjay Subhash Gaikwad¹, Bhargav²

¹PG Scholar, ²Asst. prof.

Department of Shalya Tantra,

B.M.J. Ayurved Medical College & Hospital, Gajendragad. Karnataka, India

Email: drdhananjay4444@gmail.com

ABSTRACT

Appendicitis is a condition in which, the appendix becomes swollen and inflamed. During pregnancy appendicitis will need surgical intervention due to chances of perforation and sepsis. It may affect the pregnancy due to septicemia. It is a small protrusion in the shape of a worm-like pouch and is attached to the large intestine. The functionality of appendix is unclear, especially since its removal does not seem to affect a person's health in any way. However, new studies are exploring the possibility that the appendix may contain and protect bacteria that are beneficial in the function of the human colon. The most common form of treatment for appendicitis surgery, which includes removal of the appendix.

Key words: Pregnancy, appendix, laparoscopic appendectomy, natural orifice transluminal endoscopic surgery (NOTES), single incision laparoscopic surgery (SILS).

INTRODUCTION

Suspected appendicitis is the most common indication for surgery for non obstetric conditions. But during pregnancy, occurrence of this condition is approximately 0.15 to 2.10 per 1000. Appendicitis occurs most often in the second trimester of pregnancy. Abdominal surgery during pregnancy, particularly appendectomy, can increase the risk of unfavorable outcomes. During pregnancy diagnosis is difficult, because of relatively high prevalence of abdominal discomfort, gastrointestinal complaints & anatomical change related to the increase in ute-

rine volume.

A ruptured appendix is more common in pregnant women, especially in the third trimester, possibly due to the difficulties & the reluctance to operate on pregnant women, which ultimately delays diagnosis & treatment.

Aim & Objective:

To assess the maternal & fetal outcome in pregnant women presented with acute appendicitis.

Symptoms:

If a pregnant woman experiences pain in the

area to the right side below her abdomen, it is likely to indicate appendicitis as that is the most common symptom irrespective of gestational age. The abdominal pain experienced as a result of this condition, has a few defining characteristics. It usually occurs suddenly and if it starts at night, then it causes a person to wake up with a start. This pain near the belly button, then move lower and to the right. As the time progresses, the pain quickly progresses in severity. It makes simple movement as well as taking deep breath, coughing or sneezing, extremely painful. The debilitating pain induces other changes such as loss of appetite, nausea and vomiting, which may be viewed as other symptoms of the conditions.

Diagnosis:

Pregnancy makes appendicitis more difficult to diagnose. The altered state of the body makes it difficult to detect this condition. The displacement of the appendix by the uterus increases the separation of the visceral and parietal peritoneum decreases the ability to localize tenderness during physical examination. The possibility of other conditions, such as pyelonephritis and twisted ovarian cyst, also need to be considered. Additionally, physiological changes that take place in pregnancy, such as leukocytosis (increased white blood count) and reduced tendency to develop hypotension and tachycardia can worsen the condition. Also, some of its symptoms, such as nausea and vomiting are similar to those experienced during pregnancy. Despite all these spokes, the patient's history and physical examination is useful indicator of appendicitis. Responses of rebound tenderness and guarding, that usually indicate this health problem are considered less common in late pregnancy,

due to the loosening of the abdominal wall muscles. Ultrasound sonography might prove useful during the first trimester, in detecting this problem.

Treatment:

Surgery needs to be performed early for the best result. Rupture of the appendix can be dangerous for the mother and her baby. Immediate surgery, along with preoperative antibiotics, can be vital in preventing the bursting of the appendix, and reduce the hazards it would present to both lives. A laparoscopic appendectomy or an open appendectomy can be performed, depending on what is the best for mother. Though both are considered equally safe, if conditions allow, laparoscopic surgery has the advantages of lesser narcotic use, better intra operative visualization, to reduced post operative pain, quick return of the bowel function, early ambulation, and a shorter stay in the hospital after surgery.

Complication:

Labor can arise during or after surgery, although, preterm delivery is rare. In some cases, threatened pre mature labor has been due to ruptured appendix. In such cases, emergency operation with the use of antibiotics was the best treatment. There have been cases wherein delay in operating has led to premature delivery. A pregnant woman exhibiting any of the symptoms should contact her medical practitioner immediately.

Appendectomy:

An appendectomy is the surgical removal of the vermiform appendix. This procedure is normally performed as an emergency procedure, when the patient is suffering from acute appendicitis. However, a 12- hour delay had no effect on outcomes, in a large retrospective study

In one large observational study in 2003, 30 day mortality was 8% in an adult population. Appendectomy may be performed laparoscopically (this is called minimally invasive surgery) or as an open operation. Laparoscopy is often used if the diagnosis is in doubt, or if it is desirable to hide the scars in the umbilicus or in the pubic hair line.

Recovery may be a little quicker with laparoscopic surgery; the procedure is more expensive and resource-intensive than open surgery and generally takes a little longer, with the (low in most patients) additional risks associated with pneumoperitoneum (inflating the abdomen with gas). Advanced pelvic sepsis occasionally requires a lower midline laparotomy.

The procedure for an open appendectomy is as follows –

1. Antibiotics are given immediately if there are signs of sepsis; otherwise, a single dose of prophylactic intravenous antibiotics is given immediately before surgery.
2. General anaesthesia is induced, with endotracheal intubation and full muscle relaxation, and the patient is positioned supine.
3. The abdomen is prepared and draped and is examined under anesthesia.
4. If a mass is present, the incision is made over the mass; otherwise, the incision is made over McBurney's point, one third of the way from the anterior superior iliac spine to the umbilicus; this represents the position of the base of the appendix.
5. The various layers of the abdominal walls are opened.
6. The effort is always to preserve the integrity of abdominal wall. Therefore, the external

oblique aponeurosis is split along the line of its fibers, as is the internal oblique muscle. As the two run at right angles to each other, this reduces the angles to each other; this reduces the risk of later incision hernia.

7. On entering the peritoneum, the appendix is identified, mobilized and then ligated and divided at its base.
8. Some surgeons choose to bury the stump of the appendix by inverting it so it points into the caecum.
9. Each layer of the abdominal wall is then closed in turn.
10. The skin may be closed with staples or stitches.
11. The wound is dressed.
12. The patient is brought to the recovery room.

Incision:

The following incisions are placed for appendectomy:

- 1) McBurney's incision
- 2) Lanz Incision
- 3) Rutherford Morrison incision
- 4) Para-median incision

Over the past decade, the outcomes of laparoscopic appendectomies have compared favorably to those for open appendectomies because of decreased pain, fewer postoperative complications, shorter hospitalization, earlier mobilization, earlier return to work, and better cosmesis. However, despite these advantages, efforts are still being made to decrease abdominal incision and visible scars after laparoscopy. Recent research has led to the development of natural orifice transluminal endoscopic surgery (NOTES). However, there are numerous difficulties that need to overcome before a wider clinical application of NOTES is adopted, including complications such as the

opening of hollow viscera, failed sutures, a lack of fully developed instrumentation; and the necessity of reliable cost benefit analyses. Many surgeons have attempted to reduce incisional morbidity and improve cosmetic outcomes in laparoscopic appendectomy by using smaller ports. Kollmar et al. described moving laparoscopic incision to hide them in the natural camouflages like the suprapubic hair line in order to improve cosmesis.

There is also an increasing trend towards single incision laparoscopic surgery (SILS), using a special multiport umbilical trocar. With SILS, there is more conventional view of the field of surgery compare to NOTES. The equipments use for SILS is familiar to surgeons already doing laparoscopic surgery. SILS has been shown to be feasible, reasonably safe and cosmetically advantageous, compared to standard laparoscopy.

Pregnancy:

If appendicitis develops in a pregnant woman, an appendectomy is usually performed and should not harm the fetus. The risk of fetal death in the preoperative period after an appendectomy for early acute appendicitis is 3% to 5%. The risk of fetal death is 20% in perforated appendicitis. Recovery time from the operation varies from person to person. Some will take up to three weeks before being completely active; for others it can be a matter of days. In the case of a laparoscopic operation, the patient will have three stapled scars of about an inch in length, between the navel and pubic hair line. When an open appendectomy has been performed the patient will have a 2–3 inch scar, which will initially be heavily bruised.

DISCUSSION

The treatment of acute appendicitis is appendectomy, which is curative. Preoperative antibiotics should cover Gram negative & Gram positive bacteria (second generation cephalosporin) & also anaerobes (eg. Metronidazole). Antibiotic therapy alone is not recommended as it is associated with poor outcomes in the short & long term, with minimum data on pregnant patients.

Immediate diagnosis and surgery are recommended since surgical intervention delayed for more than 24 hr. after onset of symptoms increases the risk of perforation, which occurs in 14 to 43 % of such patients. The risk of fetal loss is increased when the appendix perforates. Cesarean section is rarely indicated at the time of appendectomy. In laparoscopic appendectomy, reports, case studies & small cohort studies have been published suggesting that this procedure can be performed successfully during all trimesters with few complications. Although long term data on the safety & efficacy of laparoscopic appendectomy during pregnancy are limited, meta analysis of observational studies, including a total of more than 500 laparoscopic appendectomies, have shown an increase in the fetal loss rate with approach, when compared with open appendectomy.

CONCLUSION

Laparoscopic appendectomy in pregnancy is associated with low rate of intra operative complication in all trimesters. However, laparoscopic appendectomy in pregnancy is associated with significantly higher rate of fetal loss compare to open appendectomy. Rates of preterm delivery appear similar or slightly better following the laparoscopic approach.

REFERENCES

1. S. Das A concise textbook of surgery 8th edition. Jan 2014;43:1002- 1019.
2. S Bhatt SRB's Manual of Surgery 4th edition 2013;24:1005-1017.
3. Witlin AG & Sibai BM. Contemp Obstet Gynecol 1996; 41:15-30
4. Andersson RE & Lambe M. Incidence of appendicitis during pregnancy. Int J Epidemiology 2001;30:1281-5
5. Mc Gory ML, Zingmond DS, Tllou A et al. J Am CollSurg 2007; 205(4):534-40.
6. Wallace CA, Petrov MS, Soybel DI et al. Influence of imaging on the negative appendectomy rate in pregnancy. J Gastrointest Surg. 2008; 12:46.
7. Guidelines for laparoscopic surgery during pregnancy. Society of American Gastrointestinal Endoscopic Surgeons Surg Endo 1998; 12 (2):189-90.

Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Dhananjay Subhash Gaikwad & Bhargav: Management of Acute Appendicitis in Pregnancy. International Ayurvedic Medical Journal {online} 2017 {cited March, 2017} Available from: http://www.iamj.in/posts/images/upload/924_928.pdf