

INCIDENTAL APPENDECTOMY

BENEFITS AT THE TIME OF TOTAL ABDOMINAL HYSTERECTOMY

ORIGINAL
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ABSTRACT... Objective: To determine the benefits of incidental appendectomy during abdominal hysterectomy in terms of post-operative complications and cost of operation. **Duration:** (5 years) 2003 to 2008. **Design:** Retrospective study. **Methodology:** 171 patients who did (n: 73) or did not (n: 98) undergo elective incidental appendectomy at the time of uncomplicated total abdominal hysterectomy from 2003 to 2008 at three different hospitals by a single surgeon. The data was obtained about age, operation time, hospital stay, postoperative complications like (fever, wound infection, abscess formation, wound collection, wound dehiscence). Post-operative follow up was done for 5 years. Data was analyzed with chi square test using SPSS 16. **Results:** Seventy three incidental appendectomies were performed in this study of 171 patients (43%). The procedure was most commonly performed with total abdominal hysterectomy. Bilateral salpingo oophorectomy was performed in 27 (16%) while unilateral in 13 cases (7.6%). Histopathology was done in 114 cases of uterus (70%), all the ovarian samples (100%), and 14 of appendixes (19%). Only 06 appendixes out of 14 were reported inflamed (42.8%). Sixteen patients (16.3%) out of remaining 98 patients reported for appendectomy within 3 to 5 years following TAH. P value <0.05 was considered significant and results of both groups were compared with mean and P value. **Conclusions:** The data from current study and review of literature affirms incidental removal of the appendix. The two groups are comparable to each other in all parameters and perforation. The decision to perform an elective coincidental appendectomy at the time of an unrelated gynecologic surgical procedure should be based on individual clinical scenarios and patient characteristics and preferences.

Key words: Acute appendicitis, abdominal hysterectomy, appendectomy

INTRODUCTION

Incidental appendectomy has been a subject of controversy for many years and incidental removal of the appendix during other operations has been suggested by many as it incurs minimum morbidity, preventing future morbidity and mortality. The possible benefits include preventing a future emergency appendectomy and excluding appendicitis in patients with complicated differential diagnoses, such as those who have chronic pelvic pain or endometriosis¹. Other groups that may benefit from elective coincidental appendectomy include women in whom pelvic or abdominal radiation or chemotherapy is anticipated, women undergoing extensive pelvic or abdominal surgery in which major adhesions are anticipated postoperatively, and patients in whom making the diagnosis of appendicitis may be difficult because of diminished ability to perceive or communicate symptoms (eg, the developmentally disabled)². In laparoscopic hysterectomy it is not associated with significant risk and can be routinely offered to patients planning elective gynecologic laparoscopic procedures, as is standard for open procedures³. During abdominal and vaginal gynecological procedures it is considered safe and the removal of appendix has been suggested every time the

peritoneal cavity is opened. However decisions regarding the efficacy of incidental appendectomy should be based on the epidemiology of appendicitis. The best data were published by the Centers for Disease Control and Prevention based on the period from 1979 to 1984⁴. Opponents of this technique has stated about increased operative time and an added morbidity in some cases if the operation serves no useful purpose. Others have argued about removing a potentially dangerous tissue at the time of some clean surgery. The purpose of this retrospective study and review of literature is to find benefits of incidental appendectomy in low socioeconomic groups undergoing total abdominal hysterectomy (TAH).

SUBJECTS AND METHODS

Seventy three (73) appendectomies were performed out of 171 patients undergoing total abdominal hysterectomy from 2003 to 2008 at three different hospitals. The patients were primarily admitted for abdominal hysterectomy. The patients of acute appendicitis at the time of surgery were not included in the study. Similarly previous appendectomies, uncontrolled diabetes mellitus, uncontrolled hypertension and malignant disease were excluded. All patients were healthy

females of 31 to 58 years of age with different indications for hysterectomy. The selection of patients for incidental appendectomy at the time of total abdominal hysterectomy was random and written informed consent was taken in all cases after explaining the procedure. The results were statistically analysed and two groups were compared with each other.

RESULTS

A total of 171 patients undergoing abdominal hysterectomy were selected for this study. All patients were female of 31 to 58 years (mean age 46) and were generally healthy. These patients were randomly selected for appendectomy. Seventy three incidental appendectomies were performed in this study of 171 patients (43%). Bilateral salpingo oophorectomy was performed in 27 (16%) while unilateral in 13 cases (7.6%). Histopathology was done in 114 cases of uterus (67%), all the ovarian samples (100%), and 14 of appendixes (19%). Only 06 appendixes were reported inflamed (43%). Sixteen patients (16%) out of remaining 98 patients reported for appendectomy within 3 to 5 years of TAH which is 9% of total (171). The average postoperative hospital stay was 3 days(mean 2.8 days) for most cases(90%). The mean operative time for total abdominal hysterectomy with appendectomy was 74 min and 72 min for total abdominal hysterectomy (mean total 73 min). The complications recorded in both groups were fever, incision infection, wound collection, abscess formation. Histopathology revealed inflammation of 06 appendixes out of 14.All the results are summarized in Table I , II, III, IV and Figure 1, 2. The P value in both groups was calculated using Pearson Chi Square test and the P value less than 0.05 was considered significant. The P value of both groups regarding operation time(P =0.06), hospital stay(P=0.5), post-operative fever(P=0.392), abscess formation(p=0.397), wound collection(P=0.99), incision infection(p=0.14) was not significant (P>0.05).

DISCUSSION

Incidental appendectomy (IA) remains a controversial issue among different specialists and for open vs. laparoscopic method. The benefits of performing incidental appendectomy during open abdominal procedures without side effects has been mentioned in a

Table-I. Operation Details	
Total operations	171
Abdominal hysterectomy	171
Incidental appendectomy	73 (42.69%)
No appendectomy	98 (57.31%)
Re appendectomy out of 98	16 (16.32%)
Bilateral salpingoophorectomy	27 (15.78%)
Unilateral salpingoophorectomy	13 (7.6%)

Table-II. Comparison of variables between two groups		
Parameter	TAH	TAH + Appendectomy
Operating time mean	72 min	74 min
Blood transfusions	-	-
Hospital stay mean	2.7 days	2.8 days
Fever	19 Patients (18.62%)	23 Patients (16.79%)
Incision infection	4 Patients (3.92%)	7 Patients (5.11%)
Wound collection (Seroma)	4 Patients (3.92%)	3 Patients (2.19%)
Wound dehiscence	-	-
Wound abscess	1 Patient (0.98%)	2 Patients (1.46%)
Drains	4 Patients (3.92%)	3 Patients (2.19%)

Table-III. Histopathology results	
Uterus	114 (66.66%)
Ovary	171 (100%)
Appendix	14 (19.1%)
Inflamed appendix	6 (43%)

recent study by Jeffery B. Albright MD et al³. Although this controversy of performing incidental appendectomy exists for both open method and the laparoscopic

Fig-1. Comparison of complications between TAH and TAH with appendectomy

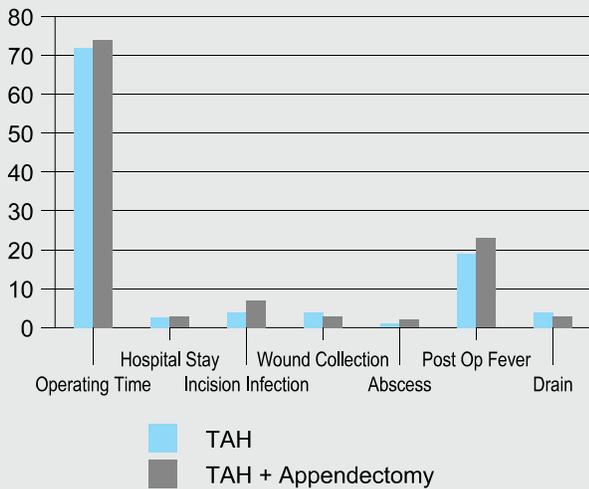


Fig-2. Operation details

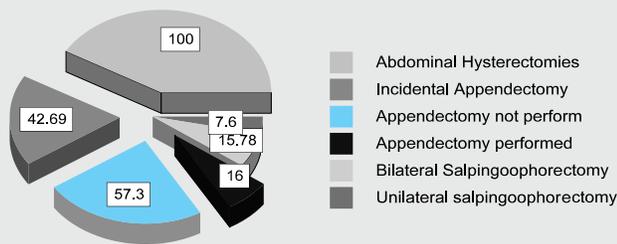


Table-IV. Comparison of P value by Chi Square Test

Variables	P Value	Remarks P<0.05 is significant
Operation time	.06	-
Hospital stay	.504	-
Incision infection	.147	-
Wound collection	.993	-
Abscess	.397	-
Postoperative fever	.392	-
Drain	.993	-

approach, the procedures are continued to establish better approach despite its controversy⁴. Jonathan Y. Song et al in a study of 722 laparoscopic surgery

performed incidental appendectomy during routine gynecologic surgery concluding it safe and quick⁵. Other have confirmed the safety of performing incidental appendectomy at the time of cesarean section where authors, have proposed that clinicians visualize and palpate the appendix at all cesarean sections, and remove those with evidence of inflammation or disease⁶.

Proponents of this procedure cite technical ease and low morbidity of the procedure, no additional risk in anaesthesia, high incidence of disease found in specimens, and elimination of confusion over future conflicting diagnosis.

The cost benefit of two operations in one setting is a major factor for recommending incidental appendectomy in low income population of our society. The prophylactic appendectomy during cholecystectomy in young patients was considered safe procedure and cost effective⁷. The results of two groups (TAH and TAH with incidental appendectomy) were not able to reveal any significant statistical difference (p>0.05). Keeping in view these results removing appendix at the time of abdominal hysterectomy is cost effective and beneficial. Similarly performing this combined procedure will help to narrow down the differential in future patients presenting with abdominal pain. Others considering appendix a potentially unsafe organ, state their opinion that removing appendix which is considered potentially harmful during clean abdominal surgery will definitely pose risk to complications and will complicate the outcome. Moreover transecting an organ containing faces in an otherwise clean procedure will violate sound surgical principles with increased operative time and morbidity. In recent incidental surgeries, morbidity and operative time was not increased in these cases. However this stands true for cases where the appendix is infected and appendectomy carries additional risk.

The operative time and complications in both groups were not statistically significant (Table-V) in our study and failed to reveal a substantial difference. Same had been affirmed by experience surgeons performing these operations and report of mortality in such combined operations had been very less in open as well as laparoscopic surgery⁸. The reported fatality in incidental

cases was in old age and younger population benefit in such operations⁹. Therefore, having an operation for presumed appendicitis at an older age increases the morbidity and mortality, as would be expected.

In another study it was concluded that incidental appendectomy at the time of benign gynecologic procedures does not increase postoperative complication rates or length of hospital stay. The inclusion of incidental appendectomies in all abdominal hysterectomies could potentially decrease the morbidity and mortality rates because of increased morbidity of appendicitis in elderly women¹⁰. 73 (43%) of cases in our study had incidental appendectomy at the time of abdominal hysterectomy and 16 (9%) patients were reoperated for appendectomy within 3 to 5 years of hysterectomy in other group without fatality and morbidity. Our study was for hysterectomy cases but the literature supports this procedure in various age groups and different procedures as in ovarian endometrioma cases¹¹ but is not required during radical cystectomy as the risk of subsequent appendicitis is extremely low¹².

A local study of 25 cases, combining abdominal hysterectomy, appendectomy and cholecystectomy in one operation was recommended for safety, ease of operation, and cost effectiveness¹³. In this study they had two different incisions, one for hysterectomy and appendectomy and second for the cholecystectomy and had extra operation time of 20- 35 min after hysterectomy. Performing the two major incidental operations in one setting will increase operating time, hospital stay, cost and morbidity. Average hospital stay in this study was 8 to 13 days which is contrary to our patient's hospital stay of average 3 days. They have backed this view of performing incidental appendectomies during abdominal procedures but only benign cases. The benefits of combining hysterectomy and appendectomy had been mentioned in other studies as well, recommending even appendectomy in Caesarean sections^{14,15}.

In a study comparing cost effectiveness of open and laparoscopic incidental appendectomy has recommended open method as compared to other depending upon the billing procedures under ages of 25-

35 years¹⁶.

Albeit, the incidental appendectomy has been recommended in open and laparoscopic abdominal procedures. The decision of performing these operations must be individualized considering age and concurrent disease. Further studies are required in large samples to ascertain the benefits. In our setup these operations have advantage over multiple surgeries because of their cost effectiveness.

Conclusion

We strongly advocate incidental appendectomies in general surgical as well as gynaecological procedures and recommend further studies on large scale to testify this surgery.

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