

Is Routine Histopathological Examination of Appendix Mandatory?

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ABSTRACT

Introduction: No age is immune for appendicitis and appendicectomy. Appendicectomy is one of the most common operations done all over the world. Emergency surgeries are more common than elective. Histopathological examination of every excised tissue is strongly recommended but trained manpower and laboratory for histopathological examination is not available in every hospital in our country.

Methods: It is a prospective observational study of appendectomy performed at Bir Hospital, Kathmandu, Nepal country over a period of three years. Histopathological examination reports and peroperative findings were collected. Histopathological examination was performed by postgraduate pathologist at different hospitals and laboratory centres. Peroperatively appendices were categorized as non malignant looking appendix and suspicious malignant looking appendix by operating surgeons at different hospitals. Histopathological examination reports were compared with peroperative categorization.

Results: Eight hundred and fifty five appendectomies performed during the study period were analysed. Eight hundred thirteen (95.1%) cases had non-malignant looking appendix and 42 (4.9%) cases had malignant looking appendix peroperatively. Seven (0.8%) cases were found malignant and 848 (99.2%) cases were found non-malignant on histopathology report. All seven (16.67%) malignant cases were from 42 suspicious malignant looking cases.

Conclusion: Routine histopathology examination is mandatory for only peroperative suspicious malignant looking appendix.

Keywords

Appendix, Histopathological examination, Remote areas.

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INTRODUCTION

Appendicectomy is one of the most common operations done all over the world. Emergency surgeries are more common than elective. No age is immune for appendicitis and appendicectomy. Histopathological examination of every excised tissue is strongly recommended but trained manpower and laboratory for histopathological examination is not available in every hospital in our country.

This study has been designed to ameliorate confusions on which specimens are recommended for histopathological examination especially in areas where no laboratory services are available and transportation to deliver specimens to equipped laboratory is expensive.

METHODS

It was a prospective observational study conducted at Bir

Hospital, Kathmandu, from January 2012 to December 2014. Ethical clearance was obtained from Institutional Review Board.

Eight hundred and fifty five patients were included in the study. Their peroperative findings were categorized into normal looking appendix and suspicious malignant looking appendix. Peroperative finding were compared with histopathological reports. A performa was prepared by the principal author and was filled by the principal author and the coauthors while working at Bir Hospital. All the appendectomies performed by the authors for whom histopathological investigation was done were included in the study. All patients for whom either Histopathological examination were not done or did not report with same were excluded.

Data were analysed as percentage of the total in the respective categories as presented.

RESULTS

There were 855 cases. Maximum numbers of cases were in 20 - 40 year age group among both the sexes. Five hundred fifty four (64.8%) were males and three hundred one (35.2%) were females. Eight hundred thirteen (95.1%) cases had non-malignant looking appendix and 42 (4.9%) cases had malignant looking appendix peroperatively. Seven (0.8%) cases were found malignant and 848 (99.2%) cases were found non-malignant on histopathology report. All seven (16.67%) malignant cases were from 42 suspicious malignant looking cases. The results have been summarized in Table 1.

Table 1: Comparative data of peroperative findings with histopathology examination report

Histopathology examination report	Peroperative finding		Total
	Non malignant looking appendix	Suspicious malignant looking appendix	
Non-malignant	813	35	848
Malignant	0	7	7
Total	813	42	855

Table 2: Age and sex distribution

Sex	Age					Total
	<20 years	21 – 40 years	41 – 60 years	61 – 80 years	>80 years	
Males	130	350	53	15	6	554

Females	79	181	25	9	7	301
Total	209	531	78	24	13	855

Fig 1: Malignant looking Appendix specimen



Fig 2: Normal appendix



Fig 3: Histopathology of appendix



DISCUSSION

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. The first recorded successful appendectomy was on December 6, 1735 at St. George’s Hospital in London, when French surgeon Claudius Amyand described the presence of a perforated appendix within the hernial sac of an 11 year old boy who had undergone successful herniotomy¹. Appendicectomy can be performed by open technique or laparoscopically. Histopathological examination of the appendix is routinely

performed because there are still a number of unusual diagnoses found in appendectomy specimens supporting the continued use of routine histology^{2,3}. In our study only 0.8% was found malignant, and 99.2% were found to be non-malignant. High number of appendicitis in adolescents and young adults were found in our study, which is similar to other studies. Routine histopathological evaluation after appendectomy had identified unexpected findings among pediatric patients including carcinoid tumor, pinworm, granuloma, eosinophilic infiltrates, and others, but reoperation for carcinoid tumors were not needed due to complete surgery⁴. To avoid missing of any clinically important and treatable conditions, routine histopathological examination is useful although no malignant diseases were found among 480 resected appendices in a study of Jat *et al*⁵. Retrospective analysis of 238 histopathological report of appendectomy specimens performed at single UK center recommend and justify the current practice of routine histopathological examination of resected appendix⁶.

In our study only 42 (4.9%) cases were suspicious malignant looking peroperatively and out of them seven (16.67%) cases were malignant proved histopathologically. No malignant cases were reported among non-malignant looking appendix peroperatively. Operating surgeons' bias may have occurred to categorise appendix specimen peroperatively because different surgeons were included in the study. In a study conducted at Germany, when 595 appendectomy cases, with no suspicion of malignancy pre and peroperatively, were included; three cases were found to be carcinoid tumour at tip of the appendix with size below 2 cm.

The study concluded that routine histopathological analysis did not help in the management and patients' outcome of any of the cases⁷. Similar results were given in an Iranian study⁸. Selectively sending specimens for histopathological examination can result in reduced workload on the histopathology department without compromising patient safety⁹⁻¹².

CONCLUSION

Routine histopathological examination for all appendectomy specimens is not necessary but mandatory for peroperative suspicious malignant looking appendix specimens even when equipped laboratory is far, thereby reducing the cost to the patient and overload to the

laboratories. It is however recommended that standard criteria to classify malignant and non-malignant looking appendices are designed to reduce operator bias.

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