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Pathology

CLINICO - HISTOPATHOLOGICAL CORRELATIONS OF APPENDECTOMIES : AUDIT IN A PRIVATE HOSPITAL

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ABSTRACT Acute appendicitis is a common presentation in surgical assessment units and appendicectomy accounts for a large number of emergency operations. Histopathological examination of the appendicectomy specimen are routinely carried out. The aim of this study is to correlate the histological findings of appendicectomy specimens with the clinical diagnosis of acute appendicitis, find the negative appendicectomy rate and know whether routine histologic examination of all the appendicectomy specimens is needed. This is a retrospective analysis of 59 appendectomies carried out in a private hospital between September 2016 and February 2017. The Histopathology reports of appendicectomy specimens were analysed retrospectively.

KEYWORDS :

INTRODUCTION

Acute appendicitis is a common presentation in surgical assessment units and appendicectomy accounts for a large number of emergency operations. Diagnosis is made through clinical examination. Delayed diagnosis may result in complications like perforation, peritonitis or sepsis. (1,2). Appendicitis presents most commonly as right iliac fossa pain, however in females it could be misleading and result in increased rates of negative appendicectomies (3). It is a common practice to send all the appendix removed for histopathological examination. The aim of this study is to correlate the histological findings of appendicectomy specimens with the clinical diagnosis of acute appendicitis, find the negative appendicectomy rate and know whether routine histologic examination of all the appendicectomy specimens is needed.

METHODS:

This is a retrospective analysis of 59 appendicectomies carried out in a private hospital between September 2016 and February 2017. The Histopathology reports of appendicectomy specimens were analysed retrospectively. Patients who had appendicectomies during the study period were included in the study. Appendix received as a part of right hemicolectomies were not included for the study. Patient characteristics and histopathology reports were retrieved from the records maintained. Negative appendicectomies were categorized as those appendix specimen which were removed in suspicion of appendicitis but histopathology showed normal appendix without inflammation or tumor .

RESULTS:

A total of 59 appendectomies were performed during the study period. The mean age of the patients was 30.1 years (range, 3-71 years). Adult patients (>16 years) represented 88 % of the study population. The female sex accounted for 52.5 % of all the patients. Of the 59 resected appendix, 45 (76%) had histopathology findings consistent with appendicitis. Approximately 5.1% of the 59 specimens were abnormal pathologies and were mucinous cystadenomas and endometriosis. The negative appendicectomy (normal appendix on histology) rate was 20.3%. The female sex accounted for 91.6% of the negative appendectomies. Adults (>16 years) represented 100 % of the negative appendectomies.

TABLE 1 : Percentage of appendicectomy specimens.

Total Histopathology Specimens between September 2016 – February 2017	Appendicectomy specimens received between September 2016 – February 2017	Percentage of appendicectomy specimens received between September 2016 – February 2017
695	59	8.48%

TABLE 2 : Histopathological findings in Appendicectomy specimens

Appendiceal pathology	No. of Patients	Percentage
Acute appendicitis	23	38.9%
Chronic fibrous appendicitis	3	5.08%
Mucinous cystadenoma	2	3.38%
Normal appendix	12	20.33%
Early changes of Acute appendicitis	18	3%
Endometriosis	1	1.69%

TABLE 3. : Age, Sex distribution and Negative Appendicectomy rates in patients with appendicectomy

Gender	Age (Years)	Appendicectomy (No's)		Negative Appendicectomy rate
		Total	Negative	
Males	0 – 10	5	0	0%
	11 – 20	5	0	0%
	21 – 30	7	1	14.28%
	31 – 40	7	0	0%
	41 – 50	3	0	0%
	51 – 60	0	0	0%
	> 60	1	0	0%
	Total	28	1	3.57%
Females	0 – 10	0	0	0%
	11 – 20	6	2	33%
	21 – 30	12	3	0.25
	31 – 40	4	2	0.5
	41 – 50	5	3	0.6
	51 – 60	2	1	0.05
	> 60	2	0	0
	Total	31	11	0.3548

DISCUSSION :

As per literature, negative appendicectomy rate varies from 6% to 40% (4-6). Suggested acceptable rate of negative appendicitis for institution worldwide is around 20% (2,7) and the result of this study is 20.33%. The high rates of negativity relates to avoiding and missing cases of appendicitis such as perforation, peritonitis, abscess and sepsis (7). Negative appendectomies were reported to be on higher side in female gender (4). Seetahal et al. reported 71.6% of negative appendectomies in female patients out of 475,651 cases(8). Our study also had same findings and accounts for 91.6%. Multiple reasons had been documented and most common among them were gynecological issues (8). Three patients in our study also had associated ovarian cyst, torsion and rupture findings and endometriosis. Findings of unusual pathologies in our study was around 5.08 % consistent with literature documented (9,10). Slightly higher rates in our study could be explained by the smaller sample size.

Various authors have reported that the highest incidence of negative appendicectomy occurs in females of the reproductive age group (15–49 years) and it correlates with our findings also (7,8). It cannot be overemphasized that a detailed history and good clinical examination remain the cornerstone in making a correct diagnosis of Acute appendicitis. Rate of negative appendicectomies are declining due to increased use of computed tomography (CT). Raja et al. have observed a significant reduction in negative rates to only 1 % when CT scan is performed preoperatively (11).

CONCLUSIONS:

Our Negative appendicectomy rate (NAR) is comparable with that of existing literature. To conclude, appendicectomy in female gender results in high negative rate which can be overcome by judicious use of imaging studies. More diligence is required in making clinical diagnosis of Acute appendicitis. The findings of abnormal pathologies on histopathological examination of the appendix which could potentially impact on the management of the patients justify the current practice of routine histopathological examination of resected appendix.

Conflicts Of Interest : Nil

Acknowledgment : Nil

REFERENCES

1. Hale DA, Molloy M, Pearl RH, et al. Appendectomy:a contemporary appraisal. Ann Surg 1997;225:252-61.
2. Zoarets I,Poluksht N, Halevy A. Does selective use of computed tomography scan reduce the rate of "white" (negative) appendicectomy? Isr Med Assoc J 2014;16:335-7.
3. Omiyale AO, Adjepong S. Histopathological correlations of appendicectomies:a clinical audit of a single center. Ann Transl Med 2015;3(9):119
4. Marudanayagam R, Williams GT, Rees BI.Review of the pathological results of 2660 appendicectomy specimens. J Gastroenterol 2006;41:745-9.
5. Slotboom T, Hamminga JT, Hofker HS, et al. Intraoperative motive for performing a laparoscopic appendicectomy on a postoperative histological proven normal appendix. Scand J Surg 2014;103:245-8.
6. Panagiotopoulou IG, Parashar D, Lin R, et al. The diagnostic value of white cell count, C-reactive protein and bilirubin in acute appendicitis and its complications. Ann R Coll Surg Engl 2013;103:215-21.
7. Webb EM, Nguyen A, Wang ZJ, et al. The negative appendectomy rate : who benefits from preoperative CT ? AJR Am J Roentgenol 2011; 197:861-6.
8. Seetahal SA, Bolorunduro OB, Sookdeo TC, et al. Negative appendectomy : a 10- year review of a nationally representative sample. Am J Surg 2011 Apr;201:433-7.
9. Emre A, Akbulut S, Bozdag Z, et al. Routine histopathologic examination of appendectomy specimens:retrospective analysis of 1255 patients. Intsurg 2013;98:354-62.
10. Khan OA, Morhan A, Jegatheeswaran S, et al. Routine pathological analysis of appendicectomy specimens - is it justified ? ActaChirBelg 2007;107:529-30.
11. Raja AS, Wright C, Sodickson AD, et al. Negative appendectomy rate in the era of CT: an 18-year perspective. Radiology 2010; 256:460-5