HISTOLOGICAL AUDIT OF APPENDICECTOMY SPECIMENS

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ABSTRACT

Background: The appendix is one of the commonly received specimens in the pathology laboratory. We examined one hundred and sixty five retrospective and prospective appendicectomy slides. Uniformity and clarity of reporting of this common surgical specimen was studied.

Methods:Out of a total surgical load of 2000 specimens, 165 appendix were received in our pathology department during the period from January 2009 to June 2010. 117 retrospective and 48 prospective consecutive appendix histology slides and their reports were withdrawn. Initially reported slides were reviewed blind by three histopathologists .They were not provided any clinical details. The issued reports and those of the reviewing pathologists were then compared.

Results:Of the 165 appendix slides reviewed, there was complete agreement on the initial issued report in 133 cases and discrepancy in 32 cases.

Conclusion; We suggest that greater uniformity in reporting is essential, for which fixed criteria should be formulated. In our institute we categorised into five types of appendicitis.

Key Words: Appendicectomy, Audit, Diagnosis

INTRODUCTION

The appendix, though vestigial organ form the bulk in our histopathology specimen. The diagnosis of appendicitis can be difficult sometimes even for the skilled surgeon on the operation table. Appendix was recognised as a disease causing organ in early 19th century. Reginal Fitz of Boston coined the term appendicitis in the year 1886 and stressed on the importance of early surgical treatment of it (Lally KP (2004). However, there is difference of opinion regarding the criteria in reporting these specimens resulting in interpretation variability. Therefore, the aim of our study was 1) to see for consistency in reporting of appendicectomy specimens, 2) if not, to bring uniformity in reporting by formulating fixed criteria.

MATERIALS AND METHODS

Out of a total surgical load of 2000 specimens, 165 appendix were received in our pathology department during the period from January 2009 to June 2010. 117 retrospective and 48 prospective consecutive appendix histology slides and their reports were reviewed. The slides had been initially reported by a histopathologist during the study period. The same slides were reviewed blind by three histopathologists. They were not provided any clinical details. The issued reports and those of the reviewing pathologists were then compared and the differences noted.

On an average four sections were taken from each appendix (including the tip and proximal resection margin) and stained with hematoxylin and eosin.

RESULTS

Out of 165 appendices studied, complete agreement between the reporting pathologists and the three reviewers was observed 133 cases and disagreement in 32 cases.

The agreed diagnoses were: absence of inflammation or normal in one case; acute inflammation in eight cases; acute gangrenous inflammation in six cases; chronic ongoing appendicitis in 68 cases; chronic fibrosing appendicitis in 50 cases. Periappendicitis was seen in three cases of acute appendicitis and two cases of chronic ongoing appendicitis also showed Enterobius vermicularis.

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Sr. No	Case no	1	2	3	Report issued
1	17/09	Chr.Ongoing	Normal	Chr. Fibrosing	Chr.Ongoing
2	55/09	Chr. Fibrosing	Acute	Acute Gangrenous	Acute
			Gangrenous		appendicitis
3	60/09	Chr.Ongoing	No opinion	Chr. Fibrosing	Chr.Ongoing
4	69/09	Chr.Ongoing	Acute	Chr. Fibrosing	Chr.Ongoing
			Gangrenous	with focal serositis	
5	63/09	Chr.Ongoing	No opinion	Acute with	Acute
			_	periappendiceal	suppurative
6	72/09	Chr.Ongoing	Chr fibrosing	Chr. Fibrosing	Chr.ongoing
7	99/09	Chr.Ongoing	Chr.ongoing	Acute	Chr.ongoing
8	113/09	Chr.Ongoing	Chr.ongoing	Chr. Fibrosing	Chronic
					ongoing
9	227/09	Normal	Normal	Chr. Fibrosing	Chr.ongoing
10	234/09	Chr.ongoing	Chr.ongoing	Chr. Fibrosing	Chr.ongoing
11	247/09	Normal	Normal	Chr. Fibrosing	Chr.ongoing
12	263/09	Chr.ongoing	Chr. Fibrosing	Chr.ongoing	Chr.ongoing
13	360/09	Chr.ongoing with	Chr.ongoing	Acute with	Acute
		serositis		serositis	appendicitis
14	394/09	Chr. Fibrosing	Chr.ongoing	Chr. Fibrosing	Chr.ongoing
15	414/09	Chr.ongoing	Chr.ongoing	Chr. Fibrosing	Chr.ongoing
16	786/09	Chr.ongoing	Acute	Acute appendicitis	Acute
			appendicitis		appendicitis
17	916/09	Chr.ongoing with	Acute	Acute appendicitis	Acute
		serositis	appendicitis		suppurative
18	987/09	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Chr.ongoing
19	1051/09	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Chronic
					ongoing
20	2/10	Chr. Fibrosing	Chr.ongoing	Acute with peri	Acute
21	18/10	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Chronic
22	29/10	Chr.ongoing	Acute	Acute appendicitis	Acute
			appendicitis		appendicitis
23	87/10	Chr. Fibrosing	Chr. Fibrosing	Chr.ongoing	Chronic
			with para		ongoing
24	107/10	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Acute
		~ ~ ~	~	~ .	appendicitis
25	124/10	Chr. Fibrosing	Chr. Fibrosing	Chr.ongoing	Chr.ongoing
26	183/10	-	Chr.ongoing	Chr. Fibrosing	Chronic
27	225/10				ongoing
27	325/10	Acute	Acute	Chr.ongoing	Chr.ongoing
20	204/10	appendicitis	appendicitis		
28	384/10	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Chr.ongoing
29	398/10	Chr. Fibrosing	Chr.ongoing	Chr.ongoing	Chr.ongoing
30	428/10	Chr.ongoing	Chr. Fibrosing	Acute appendicitis	Acute
01	420/10		<u> </u>		appendicitis
31	429/10	Chr. Fibrosing	Chr. Fibrosing	Chr.ongoing	Chr.ongoing
32	430/10	Chr. Fibrosing	Chr. Fibrosing	Chr.ongoing	Chr.ongoing

Table 1: There was disagreement in opinion in 32 cases.

Age(yrs)	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80
Sex M	2	14	30	17	4	2	1	1
F	0	19	23	11	2	0	0	0

1 abic 2. Age/sex distribution of patients with appendice tonnes studied
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However, no other unusual finding like malignancies or other parasites was observed in our cases unlike Duzgun A P (2004). The affected age group ranged from 8-78 years. The males were more frequently affected than females (Table2). In cases of acute appendicitis, patients presented with fever, nausea, vomiting, radiating pain to right iliac fossa and probe tenderness on ultra sonography. Total leucocyte count showed neutrophilic leucocytosis. Intraoperatively, appendix was red and inflamed and showed yellowish exudate on the serosal surface. In chronic cases, patients presented with chronic intermittent pain, more localised to the right iliac fossa.

DISCUSSION

Acute appendicitis is the most common surgical emergency in our hospital. Most of the patients presented with abdominal pain and neutrophilic leucocytosis as found in other studies (Ohene-Yeboa M and Togbe B (2006). Out of 165 appendices studied, complete agreement between the reporting pathologists and the two reviewers was observed 133 cases and disagreement in 32 cases. A similar study of 100 retrospective cases of appendicitis was conducted by Herd ME (1992). He found complete agreement in 73 cases and disagreement in 27.

In our study, the 32 cases (Table 1) showing disparity, case numbers 2,4,5,7,13,14,15,18,20,25 and 30 showed difference in the nature of inflammation, i.e. acute and chronic inflammation. Out of the remaining cases there was discrepancy in the type of chronic inflammation, i.e. fibrosing or ongoing. Two cases (9 and 11) were reported as normal appendix by two reviewers and as chronic fibrosing by one reviewer. Herd ME (1992) found discrepencies in early or resolving cases of appendicitis. In order to bring uniformity in reporting appendicetomy specimens, we tried to categorise them in following five groups:

(i) no evidence of inflammation or normal defined by absence of any inflammation.

(ii) acute appendicitis defined by mucosal ulceration, transmural polymorphonuclear cell infiltrate infiltrate, and a serosal inflammation with/without peri-appendicular inflammation.

(iii) acute gangrenous appendicitis defined by mucosal ulceration with mural necrosis with/without serosal/peri-appendicular inflammation.

(iv) chronic ongoing appendicitis defined by transmural chronic inflammation with eosinophils and lymphoid hyperplasia.

(v) chronic fibrosing appendicitis defined by chronic inflammation with submucosal and mural fibrosis.

This categorisation helped us to label the appendicectomy specimen with better confidence and was found to be highly reproducible with some exceptions only in cases with mild inflammation where some diagnosing it as normal and some as chronic ongoing. But overall, consistency has been improved in terms of labelling the specimens.

Conclusion

Since large number of appendicectomy specimens are received in our institute, we suggest that greater uniformity in reporting of appendicectomy specimens is essential, for which fixed criteria should be formulated. Therefore we categorised the types of appendicitis and implement the same to nullify the subjective variations. International Journal of Basic and Applied Medical Sciences ISSN: 2277-2103 (Online) An Online International Journal Available at <u>http://www.cibtech.org/jms.htm</u> 2012 Vol. 2 (1) January-April, pp.146-149/ Ramraje et al. **Research Article**

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