PRACTICE OF SURGEONS REGARDING EXAMINATION OF PATHOLOGICAL SPECIMENS IN OPERATING ROOM

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Background: The debate of routine versus selective submission of specimens for histopathology makes it important to know the present practice of surgeons. The objective of this study was to determine the proportion of general surgeons examining the gall bladder and appendix specimens in operating room before submission for histopathology. **Methods:** This questionnaire based survey was conducted for the general surgeons working in the city of Hyderabad, Pakistan during May-June 2008. The data was entered and analysed in SPSS 11.0 software statistical program to determine the impact of designation, hospital category and experience on the responses of surgeons. **Results:** Overall, 42 out of 47 qualified general surgeons working in Hyderabad, Pakistan responded the questionnaire. About 23.8% and 4.8% reported to be always examining gall bladder and appendix specimens respectively in operating room. About 66.7% and 40.5% reported to be submitting every gall bladder and appendix specimen respectively for histopathology. Lack of practice and poverty were reported as the common causes of not examining the specimen in operating room and not submitting every specimen for histopathology respectively. About 25.8% and 81.8% from public and private sector hospitals respectively reported to be submitting every appendix specimen for histopathology. About 88.2% and 52% of surgeons having experience of five years or less and experience of more than five years respectively reported to be submitting every gall bladder specimen for histopathology. **Conclusions:** There is widespread variation in the practice of general surgeons regarding operating room examination as well as submission of specimens for histopathology.

Keywords: General surgeons, Macroscopic examination, Operating room, Histopathology

INTRODUCTION

The standard conventional surgical teaching is to submit every resected specimen for histopathological evaluation. With the ever increasing workload in histopathology departments and overall increase in health related expenses, the wisdom of this gold standard teaching is being challenged. Multiple approaches have been attempted to decrease the workload as well as the economic burden. Previous suggestions to reduce the histopathology workload include selective examination of frequently submitted specimens such as gall bladder, appendices, lipomas, nasal polyps and prolapsed or fibroid uteri.[1] Some of the international studies have based the selective submission of pathological specimens on the macroscopic appearance and clinical history.[2,3] It is suggested to have incision and macroscopic examination of pathological specimens by operating surgeon immediately after the operation. In this scenario, the need for histopathological assessment becomes a surgical decision. This selective submission is expected to have significant economic impact especially in this underdeveloped part of the world. So, it becomes important to know the present perception and practice of the general surgeons regarding the incision and macroscopic evaluation of the pathological specimens.

With this background situation, this study was designed to determine the proportion of general surgeons incising and doing the macroscopic examination of the gall bladder and appendix specimens in operating room before submitting for histopathology.

MATERIAL AND METHODS

This was a prospective, questionnaire based survey conducted in the months of May and June 2008. This questionnaire was designed with major focus on the present practice of general surgeons regarding incision and macroscopic examination of pathological specimens in the operating room. Reasons for not doing macroscopic examination as well as not submitting every gall bladder and appendix specimens for histopathology were also sought in the questionnaire. The questionnaire was administered to all qualified general surgeons working in the city of Hyderabad, Pakistan. The names of all qualified general surgeons working in the above mentioned area were listed. The surgeons were approached individually and the questionnaires were explained by the principal investigator personally. The surgeons were requested to respond to these questionnaires without mentioning their identity and the questionnaires were collected in the closed envelopes. The questionnaire based data was entered and analyzed in SPSS 11.0 software statistical program. P-value of 0.05 or less was considered statistically significant for the purpose of comparison in this study.

RESULTS

In all, the list of qualified general surgeons practicing in the city of Hyderabad, Pakistan included 47 general surgeons. Out of these, Forty two general surgeons responded whereas five either did not respond or were not available in the city at the time of this study. Most of the surgeons (81%) were working either as or below the rank of Assistant professor. About three fourths of the surgeons in this study belong to public sector hospitals whereas remaining were from the private sector hospitals. The mean duration of experience since basic specialisation was 9.04±8.51 year with the range of 6 months to 40 years. Most of the surgeons (59.5%) were having experience of more than five years after basic specialization. About 23.8% of the surgeons reported that they always incise and examine the gall bladder in operating room after cholecystectomy whereas only 4.8% reported that they always incise and examine the appendix in Operating room after appendectomy. Most of the surgeons submit the gall bladder but not the appendix specimen for histopathology irrespective of macroscopic features. Most of the surgeons (33.3%) reported lack of practice as the commonest cause of not incising and examining the specimen in operating room. Most of the surgeons (47.6%) considered the poverty of patient as commonest cause of not submitting every specimen for histopathology. None of the surgeons considered remote residence of patient as the commonest cause of not submitting every specimen for histopathology. A detailed account of responses of surgeons is mentioned in (Table-1).

Most of the surgeons (53.3%) having rank of Assistant professor reported to be occasionally incising and examining gall bladder in operating room after cholecystectomy whereas most of the surgeons (47.4%) below the rank of Assistant professor reported to be usually incising and examining gall bladder in operating room after cholecystectomy. Most of the surgeons (50%) above the rank of Assistant professor reported to be always incising and examining gall bladder in operating room after cholecystectomy. This difference in responses was only statistically significant difference on the basis of designation. About 25.8% and 81.8% of the surgeons from public and private sector hospitals respectively reported to be submitting every appendix specimen for histopathology irrespective of macroscopic features. This difference in responses was only statistically significant difference on the basis of hospital category. About 88.2% and 52% of the surgeons having experience of five years or less and experience of more than five years respectively reported to be submitting every gall bladder specimen for histopathology irrespective of macroscopic features. This difference in responses was only statistically significant difference on the basis of experience. Apart from these three differences, there was no statistically significant effect of designation, hospital category and experience on the responses of surgeons. A detailed account of the impact of designation, hospital category and experience is mentioned in Table-2.

DISCUSSION

The literature appears to be divided on the issue whether specimens should be submitted routinely or selectively for histopathology. Most of the studies in literature are retrospective and have been focused on the value of type of submission (routine vs selective) of pathological specimens for histopathology. Although the issue has been discussed in some studies on the basis of centre based policy but none of the studies has focused from surgeon's point of view on the option of incision and macroscopic examinations by general surgeons.

The practice of routinely submitting resected specimens for pathological examination goes back almost a century and is still valid in many places, sometimes even being required by the local (state) government.[4] Surprisingly few studies have analyzed the routine submission of specimens in general surgery.[3-10] In contrast to this policy of routine submission of specimens for histopathology, the US College of American Pathologists (CAP) surgical pathology committee[11] recommended selection of surgical resected specimens for examination, preferably with the creation of an institutional practice policy with two lists: one with specimens exempt from routine submission to the pathology department and another with specimens for gross examination only. A 1997 Q-probes survey on the practice in 413 US pathology laboratories noted a wide range (2-40) in the numbers of specimen types in the exempt category, and an even greater range (6-57) for gross examination only.[12] The UK Royal College of Pathologists also published a list of recommendations to limit histopathology for certain specimens of "limited or no clinical value".[13,14] Recent evidence supports the abolition of routine histopathology for certain surgical specimens[7], such as hysterectomy specimens (for dysfunctional bleeding or from uterine prolapse repair)[15], breast reduction tissue[16] and colonic resection margins, including doughnuts[17], because of doubtful clinical value or an insufficient cost-benefit ratio.[18] Similar thought of selective submission of specimens for histopathology has been expressed and advocated in many studies.[7,19–23]

Table-1: Designation, Hospital category, Experience and Responses of Surgeons (n=42)

Parameter	Responses	Number (%)
Designation	Below Assistant professor	19 (45.2%)
	Assistant professor	15 (35.7%)
	Above Assistant professor	8 (19%)
Hospital category	Public sector	31 (73.8%)
	Private sector	11 (26.2%)
Experience after basic specialization	Five years or less	17 (40.5%)
	More than five years	25 (59.5%)
Incision and examination of Gall bladder in Operating room after Cholecystectomy	Always	10 (23.8%)
	Usually	12 (28.6%)
	Occasionally	15 (35.7%)
	Rarely	3 (7.1%)
	Never	2 (4.8%)
Incision and examination of Appendix in Operating room after Appendectomy	Always	2 (4.8%)
	Usually	9 (21.4%)
	Occasionally	17 (40.5%)
	Rarely	8 (19%)
	Never	6 (14.3%)
Histopathology of every Gall bladder specimen irrespective of macroscopic features	Yes	28 (66.7%)
	No	14 (33.3%)
Histopathology of every Appendix specimen irrespective of macroscopic features	Yes	17 (40.5%)
	No	25 (59.5%)
Commonest cause of not incising and examining the specimen in operating room	Mutilates the specimen	4 (9.5%)
	Disturbs histopathological assessment	8 (19%)
	Wastage of time and not required in my opinion	10 (23.8%)
	Laziness	6 (14.3%)
	Lack of practice	14 (33.3%)
Commonest cause of not sending every specimen for histopathology	Poverty of patient	20 (47.6%)
	Usually no effect on treatment	13 (31%)
	Poor follow up	3 (7.1%)
	Patient living in remote area	0 (0%)
	Laziness	6 (14.3%)

Table-2A: Relationship of Designation, on Responses of Surgeons (n=42)

		Designation			
Question	Responses	Below Assistant Professor (n=19)	Assistant Professor (n=15)	Above Assistant Professor (n=8)	*p*-value
Incision and examination of Gall bladder	Always	4 (21.1%)	2 (13.3%)	4 (50%)	0.034
	Usually	9 (47.4%)	1 (6.7%)	2 (25%)	
	Occasional	6 (31.6%)	8 (53.3%)	1 (12.5%)	
	Rarely	0 (0%)	2 (13.3%)	1 (12.5%)	
	Never	0 (0%)	2 (13.3%)	0 (0%)	
Incision and examination of Appendix	Always	1 (5.3%)	0 (0%)	1 (12.5%)	0.379
	Usually	5 (26.3%)	1 (6.7%)	3 (37.5%)	
	Occasional	9 (47.4%)	6 (40%)	2 (25%)	
	Rarely	3 (15.8%)	4 (26.7%)	1 (12.5%)	
	Never	1 (5.3%)	4 (26.7%)	1 (12.5%)	
Histopath. of Gall bladder	Yes	13 (68.4%)	9 (60%)	6 (75%)	0.75
	No	6 (31.6%)	6 (40%)	2 (25%)	
Histopath. of Appendix	Yes	6 (31.6%)	6 (40%)	5 (62.5%)	0.327
	No	13(68.4%)	9 (60%)	3 (37.5%)	
Commonest cause of not incising and examining the specimen	Specimen mutilation	1 (5.3%)	3 (20%)	0 (0%)	0.522
	Disturbed histopath. assessment	4 (21.1%)	1 (6.7%)	3 (37.5%)	
	Time wastage	5 (26.3%)	4 (26.7%)	1 (12.5%)	
	Laziness	2 (10.5%)	2 (13.3%)	2 (25%)	
	Lack of practice	7 (36.8%)	5 (33.3%)	2 (25%)	
Commonest cause of not sending every specimen for histopath.	Poverty	11(57.9%)	4 (26.7%)	5 (62.5%)	0.183
	No effect on treatment	4 (21.1%)	8 (53.3%)	1 (12.5%)	
	Poor follow up	1 (5.3%)	2 (13.3%)	0 (0%)	
	Remote area	0 (0%)	0 (0%)	0 (0%)	
	Laziness	3 (15.8%)	1 (6.7%)	2 (25%)	

Table-2B: Effect of Hospital category on Responses of Surgeons (n=42)

Question	Responses	Hospital category		
		Public sector (n=31)	Private sector (n=11)	*p*-value
Incision and examination of Gall bladder	Always	8 (25.8%)	2 (18.2%)	0.222
	Usually	11 (35.5%)	1 (9.1%)	
	Occasional	10 (32.3%)	5 (45.4%)	
	Rarely	1 (3.2%)	2 (18.2%)	
	Never	1 (3.2%)	1 (9.1%)	
Incision and examination of Appendix	Always	1 (3.2%)	1 (9.1%)	0.078
	Usually	7 (22.6%)	2 (18.2%)	
	Occasional	16 (51.6%)	1 (9.1%)	
	Rarely	4 (12.9%)	4 (36.4%)	
	Never	3 (9.7%)	3 (27.3%)	
Histopath. of Gall bladder	Yes	19 (61.3%)	9 (81.8%)	0.215
	No	12 (38.7%)	2 (18.2%)	
Histopath. of Appendix	Yes	8 (25.8%)	9 (81.8%)	0.001
	No	23 (74.2%)	2 (18.2%)	
Commonest cause of not incising and examining the specimen	Specimen mutilation	2 (6.4%)	2 (18.2%)	0.195
	Disturbed histopath. assessment	4 (12.9%)	4 (36.4%)	
	Time wastage	9 (29%)	1 (9.1%)	
	Laziness	4 (12.9%)	2 (18.2%)	
	Lack of practice	12 (38.7%)	2 (18.2%)	
Commonest cause of not sending every specimen for histopath.	Poverty	16 (51.6%)	4 (36.4%)	0.339
	No effect on treatment	9 (29%)	4 (36.4%)	
	Poor follow up	3 (9.7%)	0 (0%)	
	Remote area	0 (0%)	0 (0%)	
	Laziness	3 (9.7%)	3 (27.3%)	

Table-2C: Effect of Experience on Responses of Surgeons (n=42)

Question	Responses	Experience		
		≤5 years (n=17)	>5 years (n=25)	*p*-value
Incision and examination of Gall bladder	Always	3 (17.6%)	7 (28%)	0.903
	Usually	6 (35.3%)	6 (24%)	
	Occasional	6 (35.3%)	9 (36%)	
	Rarely	1 (5.9%)	2 (8%)	
	Never	1 (5.9%)	1 (4%)	
Incision and examination of Appendix	Always	0 (0%)	2 (8%)	0.758
	Usually	4 (23.5%)	5 (20%)	
	Occasional	8 (47.1%)	9 (36%)	
	Rarely	3 (17.6%)	5 (20%)	
	Never	2 (11.8%)	4 (16%)	
Histopath. of Gall bladder	Yes	15 (88.2%)	13 (52%)	0.014
	No	2 (11.8%)	12 (48%)	
Histopath. of Appendix	Yes	8 (47.1%)	9 (36%)	0.474
	No	9 (52.9%)	16 (64%)	
Commonest cause of not incising and examining the specimen	Specimen mutilation	2 (11.8%)	2 (8%)	0.987
	Disturbed histopath. assessment	3 (17.6%)	5 (20%)	
	Time wastage	4 (23.5%)	6 (24%)	
	Laziness	2 (11.8%)	4 (16%)	
	Lack of practice	6 (35.3%)	8 (32%)	
Commonest cause of not sending every specimen for histopath.	Poverty	8 (47.1%)	12 (48%)	0.516
	No effect on treatment	4 (23.5%)	9 (36%)	
	Poor follow up	1 (5.9%)	2 (8%)	
	Remote area	0 (0%)	0 (0%)	
	Laziness	4 (23.5%)	2 (8%)	

This debate has also been highlighted in the Royal College of Pathologists guidelines August 2002[24] on the subject of whether histopathological and cytological examination is of limited value, one reads: '[Gall bladders and appendices] should be examined as significant pathology may be present with normal gross pathology'. The revised edition of this document published in December 2005[14] again suggested that sampling of the gall bladder should continue. Similar conclusion was also drawn in a local study advocating for routine submission of gall bladder specimens for histopathology.[25]

In contrast to this school of thought, a prospective study[26] of about 548 laparoscopic cholecystectomies has advocated for the incision, inspection and palpation of gall bladder after

cholecystectomy for the diagnosis of incidental gall bladder pathologies. Similarly, no unsuspected malignancies were found in a series of 1,523 cholecystectomy specimens.[23] Histopathological examination of gall bladders may therefore be indicated only if gross examination raises suspicion or does not reveal the expected cholecystitis. The incidence of carcinoma of the gall bladder starts to rise after the age of 50 years[27,28], suggesting the need for a lower threshold for histological examination of suspicious macroscopic findings in older patients.

Some of the studies conclude that routine histopathological examination of appendix yields important clinical information in addition to the operative findings and should be undertaken in all cases.[10,29,30] The option of selective submission of appendix for histopathology has the potential to miss important diagnoses which may subsequently affect patient management. This fact was observed in a study of 1,225 specimens revealing 46 unexpected findings of which 24 were clinically significant.[30] This is in contrast to the practice reported in other studies mentioning that some centres only send resected appendices when the operative findings are inconclusive.[23,31]

Despite of all these studies, the issue of routine vs selective submission of specimens remains debatable. The issue of present practice and perception of general surgeons regarding macroscopic examination as well as the submission of every specimen for histopathology has not been addressed in most of the studies. This issue needs to be addressed at length in future studies.

CONCLUSIONS

About 23.8%and 4.8% of the general surgeons practicing in Hyderabad, Pakistan reported to be always incising and examining the gall bladder and appendix specimens respectively after operation in the operating room. About 66.7% and 40.5% of the general surgeons practicing in Hyderabad, Pakistan reported to be submitting every gall bladder and appendix specimen respectively for histopathology irrespective of the macroscopic features. In view of this widespread variation, there is need for the development of a standardized protocol regarding incising and doing macroscopic examination as well as the submission of specimens for histopathology.

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