Stall FOR RESEARCE	Original Research Paper	Surgery			
International	POST CHOLECYSTECTOMY HISTOPATHOLOGICAL FINDINGS OF GALL BLADDER IN A TERTIARY CARE HOSPITAL IN KATHMANDU – A RETROSPECTIVE STUDY.				
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ABSTRACT

Introduction : Gall bladder pathologies are one of the most common surgical conditions surgeons often come across. And cholecystectomy is most commonly performed surgery worldwide, majority for chronic cholecystitis.

**Objective** : Objective of our study was to analyze the different pathological findings of post cholecystectomy gall bladder specimens submitted to the pathology department of a tertiary care hospital in Kathmandu.

**Methodology**: This is a retrospective study that was carried out in a tertiary care hospital in Kathmandu. The records on histopathology reports of gallbladder specimens were obtained from the pathology department for patients operated from April 2014 to April 2017 Analysis was done in IBM SPSS statistics version 20.

**Result**: Out of the total 1330 histopathological reports of gall bladder specimens, 1063 gall bladder specimens were of female patients and remaining 267 specimens belonged to males. More than 50% of patients were from age group 21 - 40 (female, N=682 and male, N=101). Chronic cholecystitis was the most common finding of the histopathological reports of gall bladder specimens, 1319 (99.2%). Prevalence of carcinoma gall bladder was 0.4%.

**Conclusion**: Histopathological report is essential for the identification of various gall bladder pathologies. Chronic cholecystitis is the most common pathology encountered in cholecystectomy specimen.

KEYWORDS : Carcinoma gallbladder, Chronic cholecystitis, Gall bladder pathologies, Nepal

## Introduction:

Gall bladder pathology is one of the most important diseases encountered by the surgeons. Gall bladder diseases and its surgeries are increasing worldwide. It is usually common in females after the age of forty who are fair and fertile.

Textbooks on surgical pathology suggest that chronic cholecystitis is the most common inflammation among all gallbladder pathologies.<sup>1</sup> Cholecystectomy is a common surgery performed for gall bladder diseases worldwide and is commonly performed for chronic cholecystitis.<sup>2</sup> Chronic cholecystitis may present as various histomorphological form like xanthogranulomatous cholecystitis, follicular cholecystitis, cholesterosis, acute on chronic cholecystitis, and porcelain gallbladder. Besides inflammatory disease, cholelithiasis, gallbladder polyp, carcinoma gall bladder are other gall bladder pathologies.<sup>1</sup>

After cholecystectomy surgery, gallbladder specimens are usually sent to the pathology laboratory for histomorphological examination to rule out the cause of the disease. Hence, further management depends on the finding of the histopathological report.

There are few studies on histopathological report of gall bladder specimens in Nepal. The objective of this study was to analyze the different pathological findings of post cholecystectomy gall bladder specimens submitted to the pathology department of a tertiary care hospital in Kathmandu.

#### Methods:

This is a retrospective study that was carried out in a tertiary care hospital in Kathmandu. The records on histopathology reports of gallbladder specimens were obtained from the pathology department for patients operated from April 2014 to April 2017The histopathological findings were analyzed for gender, age group, and pathological types. Permission for the use of hospital data was obtained from the hospital administration and the pathology department. Confidentiality of the patients' information was maintained. Analysis was done in IBM SPSS statistics version 20.

#### Results

We evaluated a total of 1339 histopathological reports of gall bladder specimens. Information about 'age' was missing from nine reports and they were excluded from the study.

Out of the total 1330 histopathological reports of gall bladder specimens, 1063 gall bladder specimens were of female patients and remaining 267 specimens belonged to males. More than 50% of patients were from age group 21 - 40 (female, N=682 and male, N=101) (Table 1).

Chronic cholecystitis was the most common finding of the histopathological reports of gall bladder specimens, 1319 (99.2%); followed by gallbladder polyp (N=17, 1.3%). The prevalence of chronic cholecystitis was seen to be more common in females than in males, the ratio being almost 4:1. And the female to male ratio was 3:2 in case of carcinoma of gallbladder. (Table 2).

The majority of patients with chronic cholecystitis and gallbladder polyp belonged to the age group 21-40. However, the prevalence of gallbladder carcinoma was more in age group >40 years. (Table 3).

# Table 1: Age and sex distribution of the patients.

Age Category	Male	Female	Total
(Years)	N ( %)	N (%)	N (%)
≤ 20	7(0.5)	35 (2.6)	42 (3.1)
21-40	101 (7.6)	581(43.7)	682 (51.3)
41-60	129 (9.7)	346(26.0)	475 (35.7)
> 60	30 (2.3)	101 (7.6)	131 (9.9)
Total	267 (20.1)	1063 (79.9)	1330

Histopatholog	Male		Female		Total	
ical Diagnosis	Ν	% (among	Ν	% (among	Ν	% (among
		total of		total of		total
		specific		specific		patients)
		diseases)		diseases)		
Acute	0	0.0	1	100.0	1	0.08
Cholecystitis						
Chronic	263	19.9	1056	80.1	1319	99.2
Cholecystitis						
Polyp	6	35.3	11	64.7	17	1.3
gallbladder						
Carcinoma	2	40.0	3	60.0	5	0.4
gallbladder						
Miscellaneous	8	47.1	9	52.9	17	1.3

\*Based on multiple entries (one patient might have multiple gall bladder pathologies)

# Table 3: Variation of gallbladder disease with age.

Histopathological	Age Category(Years)				
Diagnosis	≤ 20	21-40	41-60	> 60	Total
	N (%)	N (%)	N (%)	N (%)	N (%)
Acute	0	1	0	0	1
Cholecystitis	(0.0)	(100.0)	(0.0)	(0.0)	(100.0)
Chronic	42	678	472	127	1319
Cholecystitis	(3.2)	(51.4)	(35.8)	(9.6)	(100.0)
Polyp Gallbladder	0	11	6	0	17
	(0.0)	(64.7)	(35.3)	(0.0)	(100.0)
Carcinoma	0	1	2	2	5
Gallbladder	(0.0)	(20.0)	(40.0)	(40.0)	(100.0)
Miscellaneous	2	6	6	3	17
	(11.7)	(35.3)	(35.3)	(17.7)	(100.0)

\*Based on multiple entries (one patient might have multiple gall bladder pathologies)

Similarly, among the gall bladder polyp cases, the prevalence of cholesterol type poylps were more common (N=9, 52.9%). (Table 4) Among five cases of carcinoma of gall bladder, the histological differentiation was available for 3 cases, out of which 2 were poorly differentiated and one was well differentiated.

Among the miscellaneous findings, there were eight (47.1%) cases of pyloric metaplasia followed by 5 cases of choledochal cyst. (Table 5)

## **Table 4: Different Types of Polyp**

Types of Polyp	N (%)
Cholesterol polyp	9 (52.9)
Hyperplastic polyp	1 (5.9)
Tubular adenoma polyp	5 (29.4)
Not Specified polyp	2 (11.8)
Total	17 (100.0)

#### Table 5: Miscellaneous findings in gall bladder histopathology reports

Diseased status under Miscellaneous	N (%)
Choledochal Cyst	5 (29.4)
Fistulous Tract	1 (5.9)
Pyloric Metaplasia	8 (47.1)
Porcelain Gallbladder	3 (17.7)
Total	17 (100.0)

#### Discussion

In the present study, gall bladder diseases were found to be common among females compared to males with male to female ratio of 1:4. Similarly, histopathological reports confirmed that majority of the patients who underwent cholecystectomy (99.2%) were having chronic cholecystitis. Zoysa et al <sup>3</sup>, Tantia et al <sup>4</sup> and Sharma et al<sup>5</sup> also found male to female ratio of approximately 1:3 in their gall bladder pathology studies. Similarly, chronic cholecystitis was the commonest finding in the studies by Dix et al<sup>6</sup> (95.5%), Pillai et al<sup>7</sup> (94.4%), and Sharma et al<sup>5</sup> (86.2%). Whereas, in the studies done by Sharma JD et al <sup>8</sup>, Tyagi et al<sup>9</sup> and Chauhan et al<sup>10</sup> the occurrence of chronic cholecystitis was around 50%.

Carcinoma gall bladder is most common cause of death from billiary malignancy<sup>11</sup>. In current study, occurrence of gall bladder carcinoma was 0.4%. Most of them (3 out of 5) were well differentiated and remaining (2) were poorly differentiated, which is same as the finding of the study by Dix et al<sup>6</sup> (0.4%). This finding is comparable to the study by Sharma et al<sup>5</sup> which found 0.86% case of malignancy in their study. Sharma J D<sup>8</sup>, Chauhan et al<sup>10</sup> and Tyagi et al<sup>9</sup> found 2.7%, 2% and 6.8% malignancies of gall bladder respectively in their studies.

Gall bladder carcinoma is most commonly seen in advancing age. It is seen in the patient of more than 40 years old patient in the present study, which is supported by the finding by the study done by Sharma JD<sup>8</sup> which stated the peak age be 41-60(78%), similarly Bazoua et al<sup>12</sup> showed that malignancy developed in the patients of age more than 50 years, and study by Chauhan et al<sup>10</sup> showed its occurrence mainly in between the age of 40 to 50 years.

Acute cholecystitis is rarely encountered condition. Only 0.075% of acute cholecystitis was found in the present study. Other studies also support our findings. Sharma et al<sup>5</sup> showed 0.94% of acute acalculous cholecystitis and 1.6% acute calculous cholecystitis in their study. Dix et al<sup>6</sup>, Tyagi et al<sup>9</sup>, Sharma J D<sup>8</sup> and Chauhan et al<sup>10</sup> also found only 2.9%, 4.1%, 4.6% and 9% acute cholecystitis respectively in their studies. Histopathology helps to differentiate various pathologies of gall bladder and determine the further management of the patients and its outcome.

Major limitation of this study is that it was conducted in only one hospital in Kathmandu, hence the findings of this study might not represent the national scenario of the problem. However, being the central referral hospital, patients from all over Nepal come for the treatment and hence it may portray the gall bladder pathologies of the Nepalese population as a whole. Nevertheless, we recommend further multicentre study on the same issue for more appropriate finding.

#### Conclusion

Histopathological report is essential for the identification of various gall bladder pathologies. Chronic cholecystitis is the most common pathology encountered in cholecystectomy specimen.

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#### Reference

- 1. Rosai J: Ackerman's Surgical Pathology. New York, NY, Mosby, 1996
- Jessurun J, Albores-Saavedra J: Gallbladder and extrahepatic biliary ducts, in Damjanov I, Linder J (eds): Anderson's Pathology. New York, NY, Mosby, 1996, pp 1859-1890
- M I M De Zoysa, S K L A De Silva, A Illeperuma; Is Routine Histological Examination of Gallbladder Specimen;Ceylon Medical Journal March 2010;Vol. 55(1): 13-15.
- Om Tantia, Mayank Jain, Shashi Khanna, Bimalendu Sen; Incidental Carcinoma Gallbladder During Laparoscopic Cholecystectomy For Symptomatic Gallstone Disease; Surg Endosc. 2009; 23:2041-2046.
- Sharma I, Choudhury D. Histopathological patterns of gall bladder diseases with special reference to incidental cases: a hospital based study. Int J Res Med Sci. 2015 Dec;3(12):3553-3557
- F P Dix, I A Bruce, A Krypcyzk, S Ravi; A Selective Approach To Histopathology Of The Gallbladder Is Justifiable; Surg J R Coll Surg Edin Irel. 2003, 1(4): 233-235
- Pillai V, Sreekantan R, Chisthi M M. Gall bladder stones and the associated histopathology– a tertiary care centre study. International Journal of Research in Medical Sciences. 2017 Apr;5(4):1368-1372)
- 8. Sharma J D, Kalita I, Das T, Goswami P, Krishnatreya M. A retrospective study of post-

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operative gall bladder pathology with special reference to incidental carcinoma of

- berative gal bladder pathology with special reference to incidental carcinoma of the gall bladder. International Journal of Research in Medical Sciences. 2014 Aug;2(3):1050-1053.DOI:10.5455/2320-6012.ijrms20140871 Tyagi SP, Tyagi N, Maheshwari V, Ashraf SM, Sahoo P. Morphological changes in diseased gall bladder: a study of 415 cholecystectomies at Aligarh. J Indian Med 9. Assoc. 1992;90(7):178-81
- 10. Damor N T, Chauhan H M,Jadav H R.Histological study of human gallbladder. International Journal of Biomedical And Advance Research. (2013) 04 (09). Journal DOI:10.7439/ijbar
- 11. Greenberger NJ, Paumgartner G. Chapter 311. Diseases of the Gallbladder and Bile Ducts. In Longo DL, Fauci AS, Kasper DL, Hauser SL, Jameson J, Loscalzo J (Eds), 'Harrison's Principles of Internal Medicine, 18e.Retrieved November 08, 2014
- 12. George Bazoua, Numan humza, Taha lazim; Do we need histology for a normal looking gallbladder; J Hepatobiliary Pancreatic Surgery 2007; 14(6):564-568.