

The Necessity for Routine Histopathological Examination of all Cholecystectomy Specimens

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ABSTRACT

Objectives: Cholecystectomy is the established treatment for symptomatic gall stones and cholecystitis. In our locality, all cholecystectomy specimens are routinely sent for histopathological examination regardless of the presence or absence of preoperative or intraoperative suspicion of malignancy. This has led to an increased workload for the histopathologists. This study was conducted to assess the necessity for routine histopathological examination of all cholecystectomy specimens and to call attention to a selective criteria for sending gallbladders to the histopathological examination.

Materials and methods: A retrospective analysis of computerized histopathological reports of 1176 cholecystectomy specimens and the available patients clinical data for the last ten years.

Results: Analysis of 1176 cholecystectomy specimens during the last ten years, revealed five cases of primary invasive adenocarcinoma (0.42%) and one case of carcinoma in situ. Of the five invasive adenocarcinomas, three were stage pT3. One case was stage pT2 and one case was stage pT1b. In all cases of invasive adenocarcinoma, there was a clinical suspicion of malignancy before or during surgery with detectable macroscopical abnormalities that encouraged the surgeon to send the gall bladder for histopathological examination.

Conclusion: Invasive adenocarcinoma of the gallbladder is associated with detectable macroscopical abnormalities in all cases. Hence histopathological examination could be restricted to the macroscopically abnormal looking gall bladders. Such a selection will save time, cost and burden on the histopathologists without affecting the patients' safety.

Keywords: Cholecystectomy, Gall bladder carcinoma, Histopathological examination.

الحاجة الى الفحص النسيجي الروتيني لجميع عينات المرارة المزالة جراحيا

المقدمة: استئصال المرارة هو العلاج المعمول به لالتهاب المرارة الحصوي المصحوب بالاعراض في منطقتنا، يتم إرسال جميع عينات استئصال المرارة بشكل روتيني لفحص الأنسجة بغض النظر عن وجود أو عدم وجود شبهة من الأورام الخبيثة ما قبل أو أثناء العملية الجراحية. وقد أدى ذلك إلى زيادة عبء العمل بالنسبة لأخصائيي الفحص النسيجي. وقد اجريت هذه الدراسة لتقييم ضرورة الفحص الروتيني النسيجي لجميع عينات استئصال المرارة.

المواد و طرائق العمل: هذه الدراسة هي دراسة باثر رجعي لتقارير الفحص النسيجي المحوسبة من ١١٧٦ عينة استئصال المرارة خلال السنوات العشر الماضية من مختبري للفحص النسيجي في محافظة البصرة.

النتائج: أظهر التحليل باثر رجعي لتقارير الفحص النسيجي المحوسبة من ١١٧٦ عينة استئصال المرارة خلال السنوات العشر الماضية خمس حالات فقط من السرطانة الغدية الغازية الأولية (٤٢.٠٪) وحالة واحدة من سرطان في الموقع (سرطانة لابدة). من خمسة حالات سرطانة غدية غازية، كانت هناك ثلاثة حالات في المرحلة pT3، حالة واحدة في المرحلة pT2 وحالة واحدة في المرحلة pT1b. في جميع حالات السرطانة الغدية الغازية، كانت هناك شكوك سريرية من الأورام الخبيثة قبل أو أثناء العملية الجراحية بوجود تشوهات واضحة بالعين المجردة في المرارة التي شجعت الجراح لإرسال المرارة للفحص النسيجي.

الاستنتاج: السرطانة في الموقع (سرطانة لابدة) وسرطان الغدية الغازية المبكر (pT1a و pTis) تحتاج إلى مزيد من العلاج أبعد من استئصال المرارة البسيط. وبالتالي يمكن أن يقتصر الفحص النسيجي المرضي على المرارة التي تبدو مشبوهة ويجب الأخذ بنظر الاعتبار النهج الانتقائي لجميع

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عينات استئصال المرارة بدلا من الفحص النسيجي الروتيني. هذا سيوفر الوقت والكلفة والعبء على اختصاصي علم الامراض دون التأثير على سلامة المرضى.

الكلمات المفتاحية: استئصال المرارة، سرطان الصفراء، الفحص النسيجي

INTRODUCTION

Cholecystectomy, laparoscopic or open, is the established treatment for symptomatic cholelithiasis. In our locality, all cholecystectomy specimens are routinely sent for histopathological examination regardless of the presence or absence of preoperative or intraoperative suspicion of malignancy. This has led to an increased workload for the histopathologists. Gallbladder carcinoma is a rare gastrointestinal malignancy with poor prognosis due to late presentation with advanced stage.^[1] Incidental gallbladder carcinoma refers to the tumor that is unpredictable before or during operation, and is diagnosed initially by the histopathological examination of a gallbladder removed for gall stone disease.^[2] The possibility of finding a macroscopically undetectable early carcinoma (stage pTis-pT1a) in a gall bladder following cholecystectomies needs to be considered, but those carcinomas need no more than the simple cholecystectomy.^[3,15] Completion radical cholecystectomy is the ordinary treatment for incidental gallbladder carcinoma of stage pT1b and beyond.^[4,5] The overall prognosis of gallbladder carcinoma is poor, however incidental carcinoma is associated with a better prognosis. This is because carcinoma detected on histopathological examination of the cholecystectomy specimens usually represent early stage carcinoma.^[6,7] Early-stage gallbladder carcinoma for which cholecystectomy provides the maximum benefit is difficult to be diagnosed before and during surgery.^[8] Hence, it has been recommended to submit all gallbladders to routine histopathological examination.^[9] However, the role of routine histopathological examination of all cholecystectomy specimens has been revised by many authors^[10-14,17,18] This study was

conducted to assess the necessity for routine histopathological examination of all Cholecystectomy specimens and to call attention to selective criteria for sending gallbladders to the histopathological examination following cholecystectomy without affecting the patients' safety. Such a selection aims to reduce the number of gallbladders sent for histopathological examination in order to save time, cost and burden on the histopathologists.

MATERIALS AND METHODS

This is a retrospective study, included analysis of 1176 computerized histopathological reports of cholecystectomy specimens and the available patients' clinical data for the last ten years (2006-2016) in two private laboratories in Basrah-Iraq. The study included the analysis of the cases of gall bladder carcinoma diagnosed after cholecystectomy, their grade and stage, preoperative and intra-operative suspicion of malignancy and any macroscopical abnormality seen by the gross examination of the gallbladder following cholecystectomy.

RESULTS

A total of 1176 cholecystectomy specimens were submitted to the histopathological examination during the last ten years; 952 (80.9%) were females and 224 (19%) were males. Out of the total 1176 gall bladders, five cases of primary invasive adenocarcinoma and one case of carcinoma in situ, were diagnosed by the histopathological examination. Regarding the carcinoma cases, the age ranged from 46-80 years, five were females and one was male. Four cases were underwent open cholecystectomy and in two case the gall bladder was removed by laparoscopic procedure. In all cases of

histopathologically confirmed invasive adenocarcinoma, there was a clinical suspicion of malignancy before and or during surgery. The unique case of carcinoma in situ (Tis) was surprising to the surgeon. Out of five invasive adenocarcinomas, three were stage pT3. one case was stage pT2 and one case was stage pT1b. No data available regarding the follow up and survival of patients with carcinoma (Table-1).

Table 1. The characteristics of patients with gall bladder carcinoma.

Case No.	Age (years)	Sex	Preoperative/ Intraoperative suspicion of malignancy	Type of cholecystectomy	Operative findings	Macroscopical Findings	Histopathological diagnosis	Stage
1	70	male	Yes	open	Gall bladder mass	mass, 5x5x4 cm. filling the cavity	Invasive adenocarcinoma Grade II	T1b
2	50	Female	Yes	Laparoscopic	Gall bladder mass	Mass in the lower third of the bladder body;3x2x1 cm.	Invasive adenocarcinoma Grade II	T3 (with LN secondaries N1) Stage IIB
3	52	Female	Yes	open	Gall bladder mass with lymph nodes enlargement in the portahepatis	Oval mass; in the upper 1/3 of bladder 3x3x2 cm. with three lymph nodes, largest one is 1 cm.	Invasive adenocarcinoma Grade III	T3 (with LN secondaries N1) Stage IIB
4	80	Female	Yes	open	Palpable mass	Mass in the fundus	Invasive adenocarcinoma Grade II	T3
5	65	Female	Yes	open	Palpable mass at the fundus	mass at the fundus 1.5x1x1 cm.	Invasive adenocarcinoma Grade III	T2
6	46	Female	Non	Laparoscope	No wall thickening ?cholecystitis	No mass No wall thickening	Carcinoma in situ	Tis

DISCUSSION

At present, cholecystectomy is the treatment of gall bladder adenocarcinoma. In post-operative diagnosis of gall bladder carcinoma, simple cholecystectomy is enough for carcinoma in situ (pTis) and carcinoma at stage pT1a. [3, 15] Completion radical cholecystectomy is the standard treatment for incidental gallbladder carcinoma of stage pT1b and beyond. [4,5] For the unexpected, incidental gall bladder adenocarcinoma, it is the tumor stage rather than the surgical approach that affects the outcome of the patient. [15,16] In the present study, all cases of invasive gall bladder adenocarcinoma (T1b, T2 and T3) were suspected preoperatively (by ultrasonic or CT scan examination) and/or intraoperatively (mass or wall thickening). Macroscopically abnormal gall bladder was easily recognized by the surgeon and encouraged him to send the specimen for histopathological examination. This result is in

agreement with Mittal, et al (2010) who concluded that "gallbladder carcinoma is associated with macroscopic abnormalities in all cases and histopathological examination should be restricted to only those specimens which reveal a macroscopic abnormality". [13] The impact of avoiding routine histopathological examination of all cholecystectomy specimens was widely studied. Previous reports, worldwide, clearly indicated that the only gall bladder which is macroscopically abnormal should be selectively sent for histopathological examination. The authors regarded this policy as effective and safe and there is no possibility to miss any case of invasive adenocarcinoma if only macroscopically abnormal specimens were sent for histopathological examination. [10-14,17,18] In this regard, the safe management of the patient, cost-effectiveness, and the histopathologist's workload should be

appreciated. In our study, out of 1176 specimens, only five (0.4%) cases of primary invasive gall bladder adenocarcinoma were found. All were suspicious looking to the surgeon on gross examination. For that reason, and because the management of carcinoma in situ and early invasive carcinoma (pTis and pT1a) consists of a simple cholecystectomy,^[3,15] we can conclude that the histopathological examination could be restricted to the cases of macroscopically abnormal looking gall bladders.

In conclusion, invasive adenocarcinoma of gallbladder is associated with detectable macroscopical abnormalities in all cases. Hence histopathological examination could be restricted to the macroscopically abnormal looking gall bladders. A selective approach instead of routine histological examination of all cholecystectomy specimens needs to be considered.

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