Submitting the Entire Gallbladder in Cases of Dysplasia Is Not Justified

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Abstract

When dysplasia is identified in a gallbladder, many experts recommend submission of the entire gallbladder for histologic examination. We sought to determine if this practice could be justified. We reviewed 16,611 gallbladder resections over an 8-year period, and identified 17 cases of carcinoma (15 primary and 2 metastatic), 9 cases of high-grade dysplasia, 16 cases of low-grade dysplasia, and 81 cases with atypia, not otherwise specified (NOS). Sixteen (94%) of 17 adenocarcinomas were identified and sampled on the initial gross inspection, and the remaining case was identified and sampled on review of the gross specimen. None of the high- or low-grade dysplasias were identified on gross examination, but all were identified as atypical on the initial slide submitted and correctly graded with the submission of 4 additional slides. Eight (89%) of 9 high-grade, 6 (38%) of 16 low-grade, and 1 (1%) of 81 atypia, NOS, cases were subsequently entirely submitted without identification of any new lesion. We conclude that for cases of dysplasia and atypia, NOS, review of the gross specimen and submission of up to 4 additional sections identify all significant lesions, and submission of the entire gallbladder is not justified.

Dysplasia of the gallbladder is relatively uncommon, with a reported incidence of 3.3%,1 but rates as high as 25% have also been reported.1-5 The incidence is likely lower in specimens that are only partially sampled, such as those received for cholelithiasis. Some authors have recommended that at least 3 longitudinal sections be taken from these specimens to ensure adequate sampling.4 Nevertheless, our experience with 5 separate hepatobiliary experts has been that every time we send a sample from a dysplasia case, the experts ask that the entire gallbladder be submitted. In no case have we identified any additional findings with this practice. To further evaluate the usefulness of this recommendation, we reviewed our experience with dysplasia and carcinoma of the gallbladder and associated it with the sampling that was performed.

Materials and Methods

All gallbladder resections performed at Baptist Hospital, Homestead Hospital, and West Kendall Hospital (Miami, FL) from 2004 to 2011 were reviewed. Cases of adenocarcinoma, dysplasia, and atypia, not otherwise specified (NOS), were identified and the histologic findings reviewed. Cases with atypia, NOS, most often had cells with elongated and dark nuclei (similar to those seen in tubular adenomas of the colon), but were associated with intestinal metaplasia or were seen in the setting of acute inflammation and it was not clear if this represented a reactive/metaplastic or neoplastic change. Low-grade dysplasia resembled tubular adenomas of the colon without intestinal metaplasia.
High-grade dysplasia/adenocarcinoma in situ had markedly pleomorphic nuclei and often had prominent nucleoli.

All cases were initially processed as a single slide with 2 sections (cystic duct margin and random) if no lesion was identified on gross examination. If dysplasia was identified on this slide, up to 4 more sections were submitted. If a lesion was identified on gross examination, between 1 and 6 slides were submitted initially, and up to 4 more were submitted if carcinoma was identified.

Results

We reviewed 16,611 gallbladder resections over an 8-year period, and identified 17 cases of carcinoma (15 primary and 2 metastatic), 9 cases of high-grade dysplasia, 16 cases of low-grade dysplasia, and 81 cases with atypia, NOS.

Among the 17 cases of carcinoma, 16 adenocarcinomas (94%) were identified and sampled on the initial gross inspection; the remaining case was identified and sampled on review of the gross specimen. None of the high- or low-grade dysplasias were identified on gross examination, but all were identified as dysplasia or atypia in the initial slide submitted. In 2 cases that were initially thought to be low-grade dysplasia, high-grade dysplasia was identified on the additional submitted sections (3 and 4 more slides).

Subsequently, 8 (89%) of the 9 high-grade cases, 6 (38%) of the 16 low-grade cases, and 1 (1%) of the 81 atypia, NOS, cases were entirely submitted without identification of an invasive lesion. This required 13 to 47 additional slides (total slides per case, 17-51; median, 37).

Discussion

We conducted this study because we were frustrated by repeated recommendations by hepatobiliary experts to submit the entire gallbladder in cases of dysplasia. Indeed, the literature suggests that only 4 slides are needed to identify most cases of dysplasia. The identification of microinvasion is important and can be associated with an adverse outcome. However, our experience showed that it was unclear whether submission of the entire gallbladder was useful for identifying such cases. In addition, it is not clear what therapy might be available for patients who had microinvasion identified. In the end, this recommendation appeared to be simply a lot of work to identify a finding that is vanishingly rare and for which there is no effective therapy.

This recommendation is quite common. We used 5 different consultants during this study, in part to avoid getting this recommendation, and every one of them asked that we submit the remainder of the gallbladder. As documented herein, in most cases this involves a substantial number of slides, and our experience has not shown it to be of value. Although the number of cases of dysplasia and carcinoma in the current study is not large, it represents more than 15,000 gallbladder slides received in a busy community practice setting over 8 years. Nevertheless, larger studies may be of value in more clearly defining how often submission of the entire gallbladder leads to the identification of additional pathologic findings.

Our results suggest that evaluation of the gallbladder is similar to evaluation of lesions in the colon. Essentially all carcinomas can be identified as a mass at least on second inspection, and gross reexamination of the specimen in any suspect case appears to be warranted. Although dysplasia cannot be identified on gross examination, our experience suggests that once atypia is identified on routine examination, evaluation of 4 sections, as suggested by other authors, usually is sufficient to correctly diagnose and grade such lesions.

Of note, the incidence of dysplasia in our series (<0.5%) is lower than that reported in the literature, even when cases of atypia, NOS, are included. It is possible that we are missing cases of low-grade dysplasia by only submitting 1 slide with 2 sections in routine gallbladder cases. Alternatively, it is possible that our patient population has a lower risk of dysplasia than populations in other studies. Nevertheless, the identification of dysplasia in these specimens can be frustrating for patients and clinicians alike; although there is consensus that these patients are at risk for neoplasia of the biliary tract, the best management is not clear and at present no definitive treatment is available.

We conclude that for cases of dysplasia and atypia, NOS, in the gallbladder, a review of the gross specimen and submission of up to 4 additional sections is sufficient to identify all significant lesions, and submission of the entire gallbladder is not justified.

References


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