

MALIGNANT MESOTHELIOMA IN CONNECTICUT 1935 - 1977

(ANATOMIC PATHOLOGY SECTION)

INTRODUCTION

In any retrospective review of mesothelioma it is essential to include an objective review of all anatomic pathology material. This review should include all available reports and slides including cytology, surgical pathology and autopsy materials. It should be conducted by an experienced pathologist with special expertise in the surgical pathology of tumors.

thoroughly familiar with the gross and microscopic characteristics of mesothelioma and

The object of this review should be to classify the cases relative to the certainty of diagnosis using well defined criteria for the diagnosis of mesothelioma. In the present study this ^{morphologic} review is first being conducted with no knowledge of the occupational history or environmental exposure to asbestos. As the study progresses this data will be analyzed in relation to these factors.

(Slide 1 Classification)

On first review the cases in this study are being placed in one of six categories (see slide) which represent the relative certainty of the diagnosis of mesothelioma using anatomic criteria. This is being carried out on all available materials, including cytologic preparations, surgical pathology and autopsy reports and slides. As might be expected in a study of this type, the material available is quite variable. In all cases the diagnostic classification is based on autopsy materials, or ~~in some cases~~ surgical pathology

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material, in no case was cytology alone used to place a patient in category 1,2 or 3. As the study progresses, attempts will be made to obtain the original blocks for additional special stains such as PAS with and without Diastase, Alcian Blue with and without hyaluronidase, Mucicarmine, Reticulin and Masson stain as indicated. It should be mentioned that in a number of the cases already reviewed some of the above mentioned stains were available.

(Slide 2 Preliminary Results)

The preliminary results of the primary review of the first 106 cases are shown on this slide. As you can see 22 cases were considered to be mesothelioma, 38 probable mesothelioma and 28 possible mesothelioma. The 28 possible mesotheliomas, based on the material reviewed, might also possibly be some other condition such as metastatic carcinoma. Also on the basis of this first review, 6 cases were considered probably not ~~to be~~ mesothelioma and 5 were considered definitely not mesothelioma, 7 were considered unknown since no diagnostic classification could be arrived at based on the materials reviewed.

For purposes of this ~~review~~ classifications 1 and 2 were added together since these represent probable or definite mesotheliomas. Classifications 4 and 5 were also added together since these were considered not to be mesotheliomas. As broken down by percentage, there were 56.6% thought to be mesothelioma, 26.4% possibles and 10.3% not mesothelioma or excluded from the study. There were 6.6% that are still considered unknown.

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It should be pointed out that as further studies of this material are carried out, cases may be moving from one to another classification and this report should be considered only a preliminary report at this time. It also should be mentioned that less than half of the total number of cases in this study have been subjected to anatomic pathology review as of this time.

Discussion: The most striking histologic character of diffuse mesothelioma is the remarkable structural variation that occurs from area to area even in the same case. As this portion of the study progresses, the mesotheliomas will be categorized as to pleural, peritoneal or other, and an attempt will be made to categorize the histologic structure based on its predominant pattern, into (1) epithelial (tubulo-papillary and undifferentiated polygonal), (2) sarcomatous or mesenchymal and (3) mixed.

As has been emphasized by others two problems become apparent on review of this material. The first is the separation of localized or nodular (and sometimes benign mesothelial reactions) from diffuse or malignant mesothelioma. In the present study this is a minor problem because of the selection of the material being reviewed, having been obtained from the Tumor Registry where the vast majority of these cases would have been reasonably carefully reviewed in their own institution and they would have had benefit of the ~~course or~~ ^{+ outcome} progression of the disease. As is the practice in Connecticut, cases are occasionally reclassified or removed from the Tumor Registry by the local hospital when it is determined that they do not represent the malignancy originally reported.

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The second and more important problem in the present study is the separation of mesothelioma from metastatic carcinoma. The findings at autopsy in the cases so evaluated are extremely ^{valuable} valuable in this regard and the use of special stains such as Alcian Blue with and without hyaluronidase, PAS with and without Diastase and to a lesser extent Mucicarmine and connective tissue stains ^{on surgical materials} are valuable in this regard. It can be pointed out that as one gains experience in looking at large numbers of mesotheliomas, one begins to recognize a characteristic pattern which has been well described by many workers in this field. This coupled with experience in surgical pathology of tumors enables one to categorize ^{most} many of these cases in ^{the} proper class. ~~As pointed out earlier, however, on further review, this was not possible in some of the cases, however,~~ ^{also} It is ^{probable} possible that with additional studies and special stains this classification should become more accurate.

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There is another problem that has arisen and hopefully will be addressed in the later anatomic pathology studies. There is variation in the literature on the classification of these tumors. The lines between localized and diffuse are not always clear cut and the separation of benign from malignant is not always as readily apparent as one would be lead to believe by review of the literature. In fact, there are discrepancies between some of the classic papers in this field regarding characteristics of these neoplasms, both gross and microscopic. This is not limited to growth patterns such as that in the pleura or peritoneum, but includes such important characteristics such as metastatic patterns and certainly applies to histologic descriptions which are not ^{uniform} ~~uniform~~ from paper to paper. It is hoped that as an outgrowth of this study some clarification of this aspect of the problem will be forthcoming.

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