small cell areas to other regions where the appearances were more characteristic of epithelioid mesothelioma.
- The nucleocytoplasmic features of small-cell mesothelioma differ subtly from those of small cell carcinoma (Figs. 43.30 and 43.31), so that the mesothelioma cells often possess greater amounts of cytoplasm, or alternatively, the nuclei are more open and vesicular in pattern with finely divided chromatin, in comparison to the "salt and pepper" nuclear chromatin pattern characteristic of small cell carcinomas, with nuclear molding.
- Immunohistochemical studies on these mesotheliomas reveal features characteristic of mesothelial differentiation, with no evidence of neuroendocrine differentiation as shown, for example, by immunostaining for synaptophysin or chromogranin.

Nonetheless, we have encountered extremely rare cases of mesothelioma where there was some focal evidence of neuroendocrine differentiation, but such cases appear not to have been described in any detail in the literature.

Deciduoid Mesothelioma

In 1994, Nascimento et al.[775] described three cases of peritoneal mesothelioma in young females, where the tumor cells possessed abundant eosinophilic cytoplasm and showed a resemblance to decidual cells, and such cases had no identifiable prior exposure to asbestos.[776] Reports of other cases of "deciduoid" mesothelioma followed.[776–780]

It is now recognized that deciduoid mesotheliomas (Fig. 43.25)[126,778,779,781–785] are confined neither to the peritoneum nor to young women, and they can arise in the pleura and in men.[786] Their natural history is akin to other epithelial mesotheliomas, although a few patients have had long survivals,[779] whereas the tumors comprising the original report[775] pursued an aggressive clinical course. Mesotheliomas that consist only of deciduoid tissue are rare, but it is not uncommon in biopsy tissue to see a transition from more usual patterns of epithelial mesothelioma to foci of deciduoid tissue. We do not consider deciduoid mesothelioma to represent a distinctive subtype, and instead we refer simply to these mesotheliomas as epithelioid mesotheliomas with focal deciduoid features. The immunophenotype of such "deciduoid" mesotheliomas is essentially the same as for other MMs of epithelioid type.[786]

Mucin-Positive Epithelial Mesotheliomas

Up to about 5% of epithelial mesotheliomas show focal staining with Mayer's mucicarmine, PAS-diastase, and Alcian blue/colloidal iron with hyaluronidase. We refer to these mesotheliomas as mucin-positive mesotheliomas.[505]

Ernst and Atkinson[787] reported seven of 18 epithelial mesotheliomas to be mucicarmine positive. They attributed the positive staining reaction to hyaluronic acid. The review article on MM by the U.S.–Canadian Mesothelioma Panel[788] illustrated a case of mucicarmine-positive mesothelioma and indicated this finding did not exclude the diagnosis of mesothelioma. Some mucin-positive epithelial mesotheliomas show staining of the cell membrane with mucin stains and are sensitive to hyaluronidase pre-digestion (Fig. 43.109). Others show intracellular droplet staining with Mayer's mucicarmine (Fig. 43.110), PAS-diastase (Fig. 43.111), and Alcian blue with and without hyaluronidase (Fig. 43.112). In our experience, these mucin-positive epithelial mesotheliomas are the ones that show crystalloid structures ultrastructurally (see Ultrastructural Features of Mesotheliomas, above).

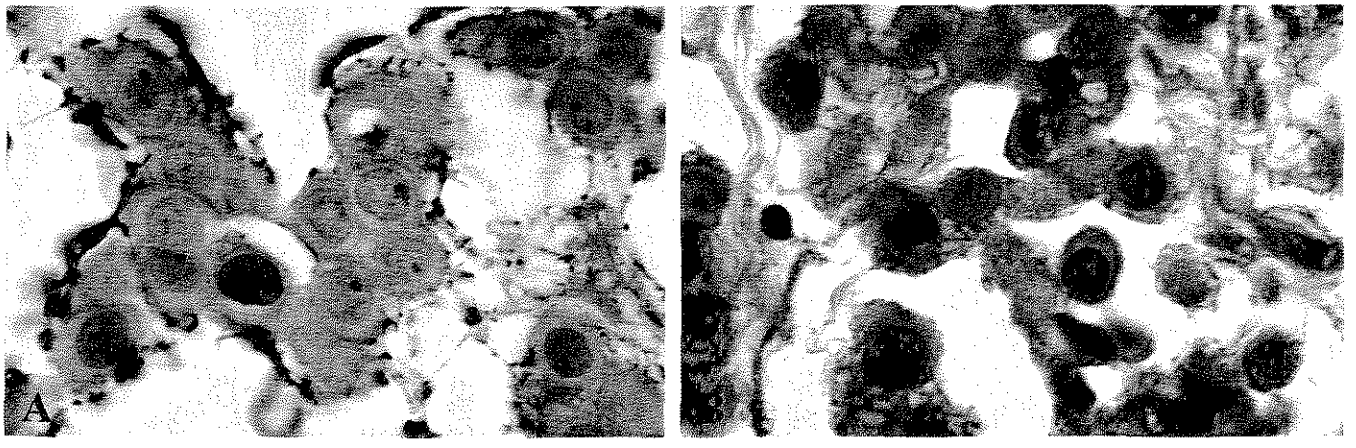

FIGURE 43.109. **(A)** This epithelial mesothelioma shows cell membrane staining for mucicarmine. **(B)** When pretreated with hyaluronidase, the mucicarmine staining does not occur, suggesting the mucicarmine staining is caused by hyaluronic acid.