hyaluronic acid (alcian blue positivity digested by hyaluronidase).

Immunohistochemical examination of the tumour showed cytokeratin (CAM 5.2) and epithelial membrane antigen (EMA) positivity. Carcinoembryonic antigen (CEA) and Leu M-1 antibody were not expressed.

Discussion

The tunica vaginalis is lined by mesothelium: a full spectrum of mesothelial proliferations from completely benign to overtly malignant can occur.

Reactive hyperplasia of the tunica vaginalis may be attended by papillary change⁴ but this is usually a focal finding and not the dominant histological configuration.

More importantly, this lesion needs to be distinguished from malignant mesothelioma and papillary carcinoma, which display nuclear pleomorphism, mitotic activity, and areas of stromal invasion. In papillary areas multi-layering of the epithelium is allied to the cytological atypia. Well differentiated malignant mesothelioma may have foci of well developed tubulopapillary structures devoid of cellular atypia. However, such areas are invariably accompanied by others showing obvious malignant features. The key microscopic feature of WDPM is the lack of cellular and architectural atypia.

In their analysis of 22 such tumours occurring in the peritoneum Daya and McCaughey found mitoses in only one case (the number not being quantified).¹ Six cases also occurring in the peritoneum described by Goepel⁵ did not show mitotic activity. The case reported by Johnson, Fuerst, and Gallager in the tunica vaginalis of a 23 year old man, would seem to

have had all the morphological characteristics of a WDPM.³ In this case mitoses were described as "infrequent", and no recurrence was noted after follow up for a year.³ No mitoses were present in the case of Barbera and Rubin,² and the patient was well after one year.

Well differentiated papillary mesothelioma is usually a small lesion in both the peritoneum and tunica vaginalis.^{1,2} Most occur in the peritoneum, and very rarely in the tunica vaginalis, with only two definite cases having been reported so far.^{2,3} Other sites include the epicardium⁶ and pleura.⁷ Peritoneal lesions are more common in females, but cases have been described in the peritoneum in males.⁵

Clinically, this lesion seems to run a bland course, but a course more akin to low grade malignancy in the peritoneum has not been entirely ruled out.¹ With this uncertainty regarding their behaviour, these lesions are designated "well differentiated" rather than "benign".⁸

Probably not associated with exposure to asbestos, the precise aetiology is not clear. Surgical excision with regular follow up is the current management.

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Mucous metaplasia of the pleura

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Abstract

A case of mucous metaplasia of mesothelium in an 80 year old woman is described. Its cause is unknown, but it is important not to confuse it with secondary tumour.

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Case report

An 80 year old woman presented with upper abdominal pain and weight loss. A right sided pleural effusion was found on examination but

no abdominal signs were detected clinically or on ultrasound scan. She had never complained of respiratory symptoms, and a chest x-ray picture after pleurocentesis, when pleural biopsy was performed, was normal. There was nothing to suggest new growth in this patient and she died about a week later. Necropsy was not performed and cause of death was given as cardiorespiratory failure.

Pleural histology

This showed inflamed vascular connective

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Photomicrograph of part of the metaplastic mesothelium showing goblet cells (haematoxylin and eosin).

tissue lined by a strip of mesothelial cells which had become detached in parts. Some of these were apparently normal mesothelial cells but were continuous with columnar cells containing basal nuclei with apical vacuoles which were periodic acid Schiff positive. A representative example of this is shown in the figure. All of the mucin containing cells were well differentiated and showed no evidence of a possible malignant origin. They did not stain for carcinoembryonic antigen by immunoperoxidase.

Discussion

The histology of the pleura indicated mucous metaplasia, described by Dunnill¹ as occurring in older patients with fibrocystic disease of the pancreas. He described the condition at necropsy in a 17 year old female.² A possible pathogenesis in this case was ectopia of bronchial epithelium following rupture of a bronchiectatic abscess.

Spencer describes a case of vacuolation of mesothelial cells ascribed to intra- and inter-

cellular oedema because staining for mucin was negative.³

In the case described there was a clear transition from mesothelium to columnar cells in an elderly patient who had no evidence of fibrocystic disease of the pancreas. The cells rested on a basement membrane and the vacuoles were periodic acid Schiff positive, thus indicating mucous metaplastic transformation of the pleura. The exact cause of this change is not known but its recognition is important to avoid it being misinterpreted as malignant tissue. This would be quite likely if the metaplastic change occurred in an area of proliferating reactive mesothelium. The morphology and negative staining for carcinoembryonic antigen are helpful in confirming the benign nature of this appearance.

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