

## **Some aspects of the ultrastructure of pseudomucinous cystadenoma of the ovary revealed by the scanning electron microscope**

by

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In recent years our studies have been concerned largely with exploration of the female genital system by means of the scanning electron microscope (SEM).

For these studies, which were centred especially on the endometrium, the uterine cervix and the ovaries, we first observed the normal aspects of these epithelial surfaces in order to obtain a comparative standard for clearly neoplastic lesions, and to find any changes in these epithelia in conditions which constitute the stages of neoplastic change.

In ovarian pathology we have enlarged on the subject of benign cystoma because some aspects of this condition seem to us to require further attention.

As briefly mentioned in our previous work, the internal wall of the cystadenoma is sometimes lined with an epithelium of cylindrical cells which are generally monostratified, but may also be pluristratified.

These epithelial zones, which have been examined in greater detail, are characterised by elements connected by many cytoplasmatic bridges of varying dimensions; in addition they are sometimes entirely or partly covered by thin filaments of pseudomucin.

The apical part of these cells is cupuliform and the surface is not smooth but very irregular because of the many invaginations and short extroflexions of the plasmatic membrane.

Microvilli are rare and show little development.

The frayed appearance of these cellular surfaces almost gives the impression that these cells are involved in an intensive secretive process of a merocrine type.

For this SEM study the samples were treated as follows: 5% glutaraldehyde, phosphate buffer with pH 7-7.2, dehydration in alcohol and acetone, exsiccation by air followed by metallisation with gold.

The observations were carried out in the Electron Microscopy Department at the Institute of Experimental Oncology with the JEOL JSM-U2 microscope.

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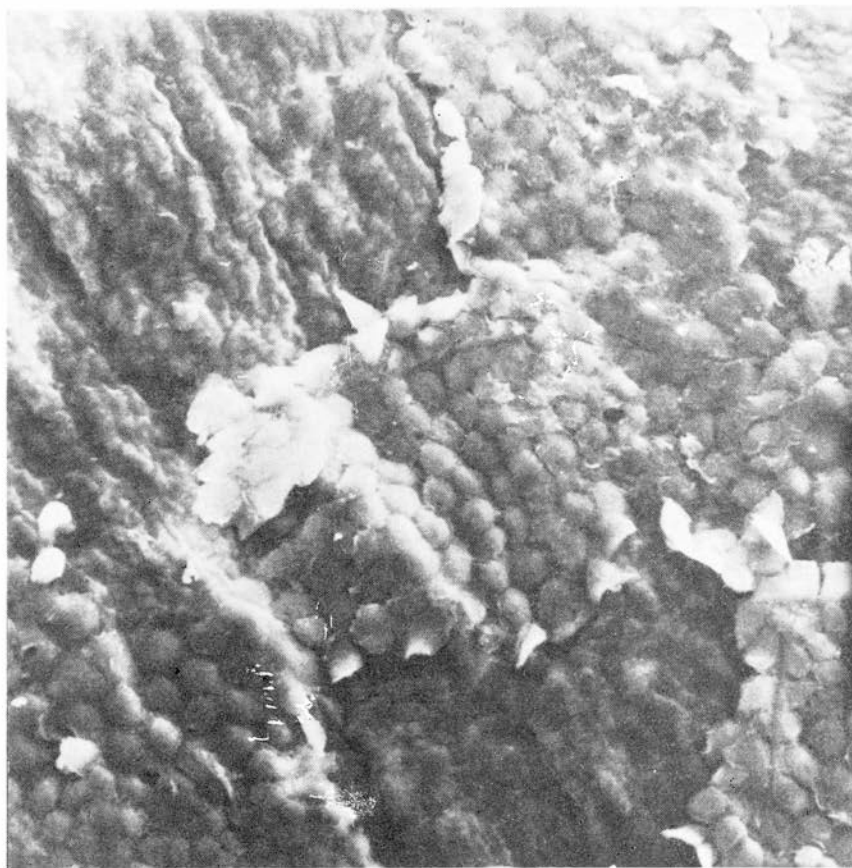


FIG. 1 - Wide zones without lining epithelium and island of closely packed prismatic cells are clearly visible (SEM 625  $\times$ ).

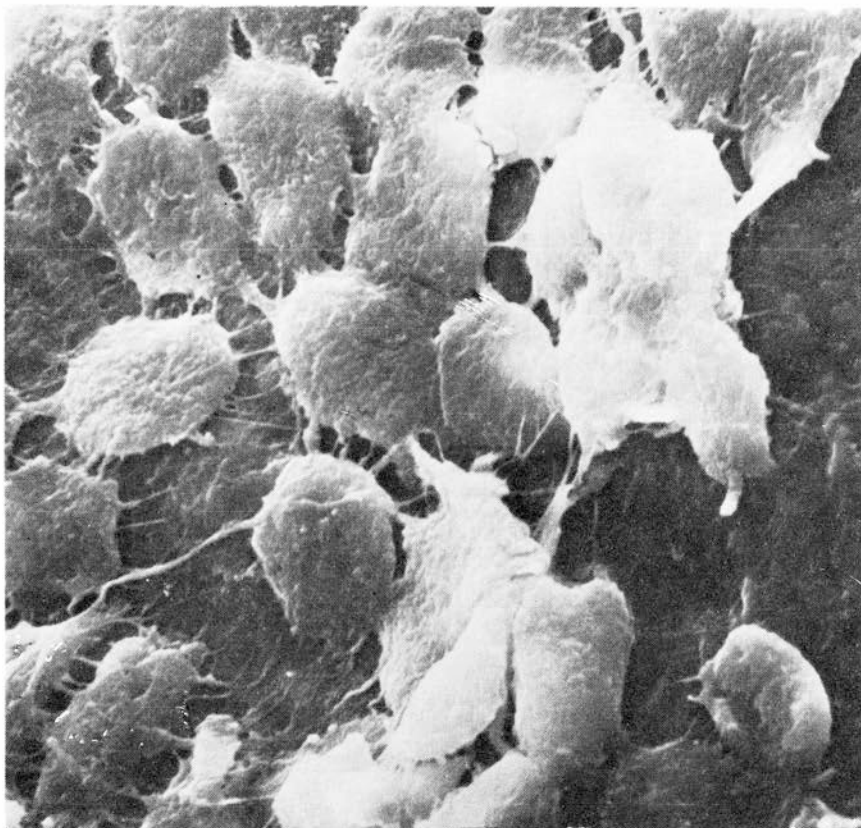


FIG. 2 - Zone lined with a single rather slack layer of cylindrical-cubic cells connected with each other by intercellular bridges. The cellular surface appears entirely lacking in microvilli and is of uniform roughness (SEM 2500  $\times$ ).



FIG. 5 - The wall of the cyst is lined with a pluristratified epithelium in this area. We also see many intercellular bridges and filaments of pseudomucin (SEM 2500  $\times$ ).

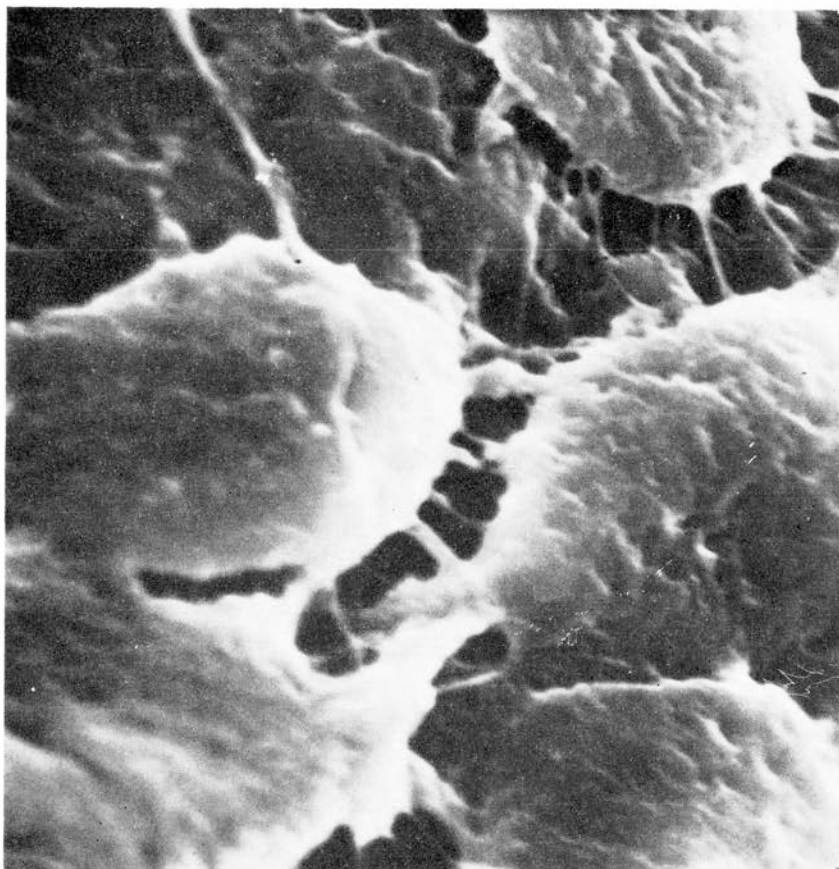


FIG. 4 - Zone with cellular pluristratification. The intercellular bridges are especially evident. The cellular surface is not smooth but highly irregular because of the many invaginations and undulations of the plasmatic membrane (SEM 6250  $\times$ ).

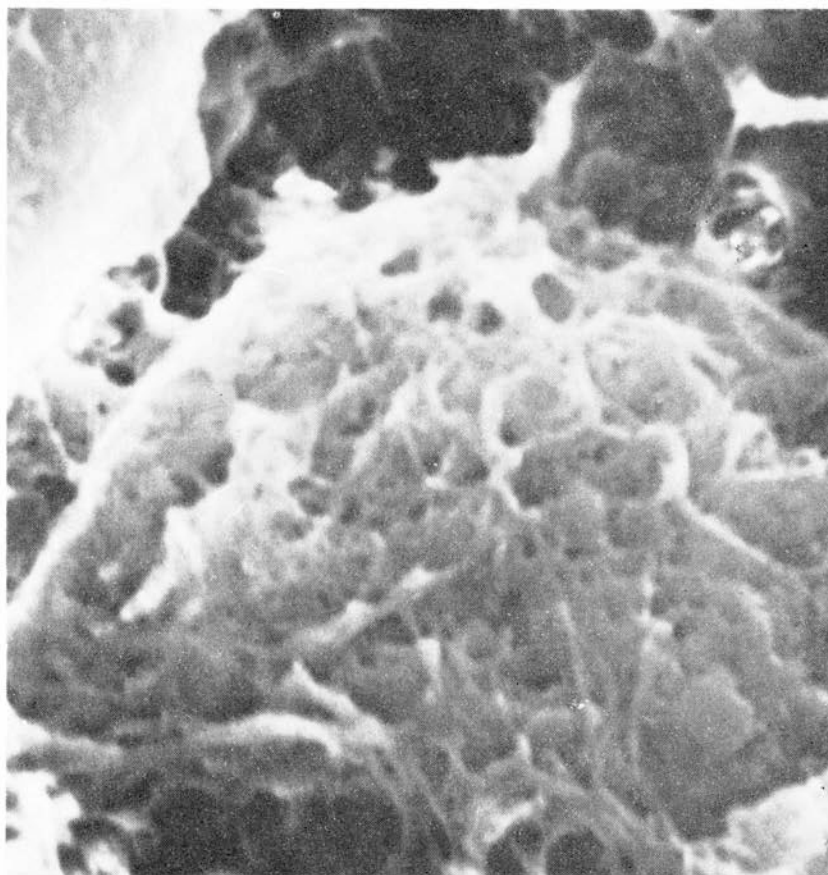


FIG. 5 - The cellular surface is very broken, with invaginations marked by extroflexions of the plasmatic membrane which form stumpy microvilli at some spots (SEM 12500  $\times$ ).

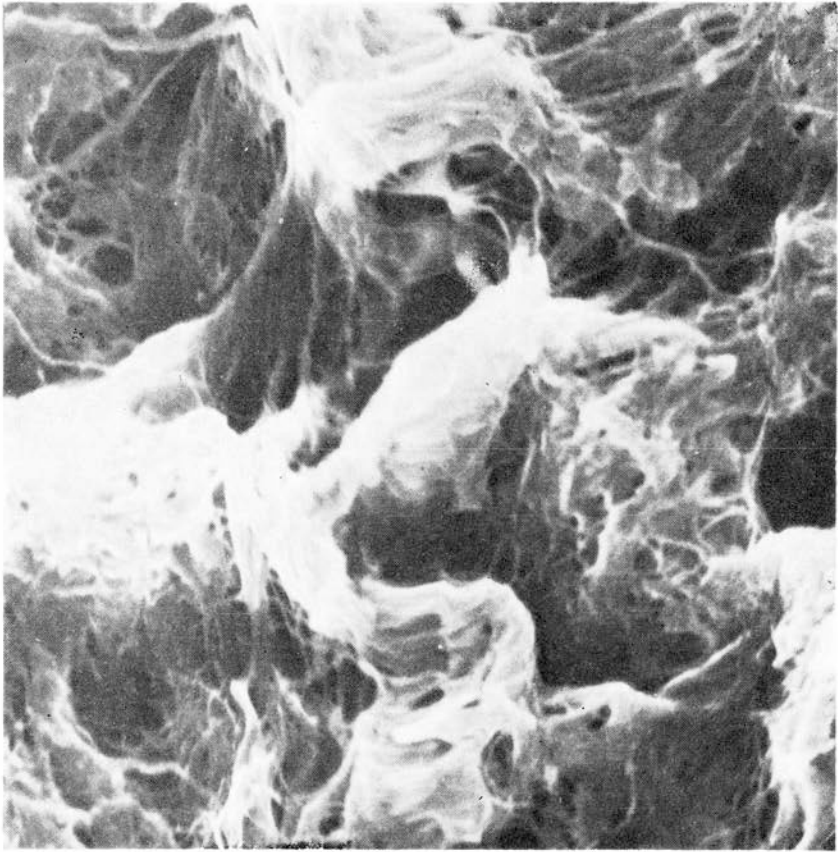


FIG. 6 - Area of the cystic wall covered by a great quantity of pseudomucin which coats almost completely the cellular layer below (SEM 7500  $\times$ ).

### SUMMARY

Very important aspects of the ultrastructure of the inner surface of a pseudomucinous cystadenoma are shown by electronic scanning microscope.

Among these aspects the cell-apices, showing strong secretory processes, seem to be pointed out.

*Translated by Samil Pabyrn Foundation*

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