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ULTRASTRUCTURAL DEMONSTRATION OF ARGYROPHIL NATURE OF SECRETORY GRANULES IN ENDOMETRIAL CARCINOMAS WITH ARGYROPHIL CELLS

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Introduction

Our recent research indicates that 22% of the cases of endometrial carcinoma contain argyrophil cells[3,4]. In this paper, we describe the argyrophil nature of the small round secretory granules in the apical portion or in the entire cytoplasm of tumor cells identified by electron microscopy.

Materials and Methods

Three endometrial carcinomas with argyrophil cells were studied by electron microscopy: 2 well differentiated adenocarcinomas and 1 adenosquamous carcinoma. Formalin-fixed tumor tissues were cut into tiny pieces and re-fixed in 2.5% buffered glutaraldehyde after immersion in 0.2 M sodium cacodylate buffer. After washing in the cacodylate buffer, the tumor tissues, unstained or stained by the Grimelius method[1], were post-fixed in 2% buffered osmium tetroxide, dehydrated in graded alcohols, and embedded in Epon. Ultrathin sections were stained by lead hydroxide and uranyl acetate for electron microscopy.

Results

Some of the tumor cells contained small round secretory granules measuring 150 to 350 mμ in diameter in the apical portion or in the

Photo. 1

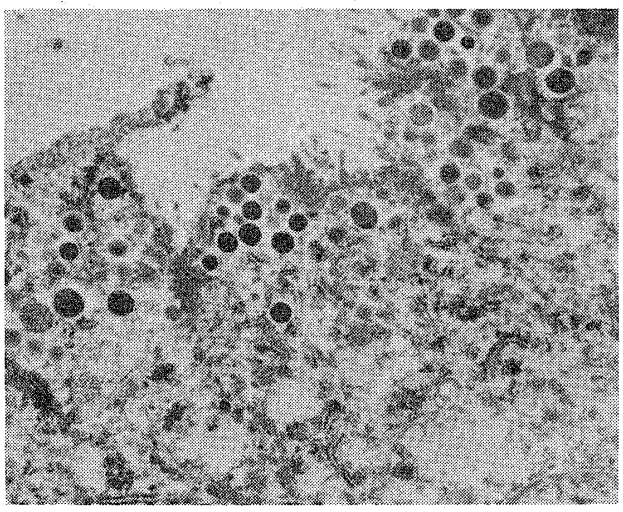
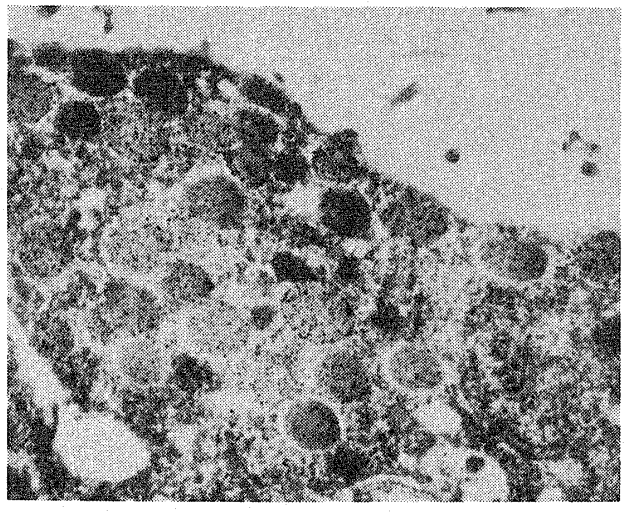


Photo. 2



entire cytoplasm (Photo 1, Electronmicrograph, ×7,800). The ultrastructural study of the tumor tissues stained by the Grimelius method revealed the specific silver precipitates over the secretory granules (Photo 2, Electronmicrograph, ×20,000).

Discussion

The neoplasms derived from APUD cells are well known to produce a variety of polypeptide hormones[2]. Endometrial carcinomas with argyrophil cells were shown to produce calcitonin[5]. However, calcitonin seemed to be produced mostly by the tumor cells other than argyrophil cells[6]. The argyrophil nature of small round secretory granules in the tumor cells was established for the first time by the present electron microscopic study, but their endocrine function still remains to be further clarified.

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