CYTOLOGY IN OVARIAN TUMOURS*

by

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The exfoliation of malignant cells from lesions other than the uterus is a relatively rare occurrence. As it is said, the appearance of malignant cells is inversely proportional to the distance they travel. However, malignant cells, ovarian in origin, have been reported in vaginal smears by Frech and Savannah (1949) Kraushaar *et al* (1949) Wachtel and Plester (1959), McGarvey (1955), Umiker and Skeen (1953) and Papanicolaou and Traut (1943). Identification of such cells is quite often the first indication of an ovarian malignancy.

The pick-up rate of malignant ovarian cells in the vaginal smear varies with various authors:

Graham	23-30%
Koss	30%
Wachtel	40%

Tweedale is the only author whose pick-up rate is very low, while Rubin and Frost (1963) report a pick-up rate of 62%. Our Clinic rate of 32.14% compares well with other authors.

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In our clinic we had a total of 100 cases of Ovarian tumours whose smears were taken. Of these, 28 were histologically proved malignant and of these 28 cases only 9 cases showed malignant cells in the smears giving us a rate of 32.14%.

Smear Pattern

The cells vary in shape and size. They may be shed singly (40%), or in tight clusters (40%), or in small sheets (20%). The cytoplasm is thin walled, often hypervacuolated or scanty and basophilic. The nuclei are large with abnormal chromatin clumps and prominent nucleoli.

Adenocarcinoma cells from the ovary are larger than those arising from the uterus/cervix and so can be easily identified. Difficulty arises when these are cells from the uterine metastases. In that case both types of cells may be found in the vaginal smear.

Three of our representative cases are described below.

CASE 1

A 50 year old patient was referred for post-menopausal bleeding and abdominal pain for 2 months, and menopause for 12 years. On examination a lump 5 x 5 inches with restricted mobility was palpable in the lower abdomen—the uterus and cervix were normal.

The smears showed clusters of atrophic parabasal cells with a few intermediate cells and endocervical cells showing squamous metaplasia and a cluster of malignant columnar cells larger

than those from either the endocervix or endometrium. (Fig. 1).

Histology revealed a carcino-sarcoma—a relatively rare, highly malignant tumour. (Fig. 2).

CASE 2

A 45 year old patient was referred for post-menopausal bleeding and menopause 1½ years. On pelvic examination the uterus was normal and the cervix irregular and bulky.

The smears showed a high K.I. and E.I. (40-42%) and a cluster of highly atypical columnar cells along with cells of C.I.S. (Fig. 3). Dilatation and curretage and biopsy confirmed the C.I.S. of cervix but reported the endometrium as normal. Repeat appearance of atypical smears drew the conclusion that they could be from the fallopian tube or ovary and at operation a small ovarian carcinoma was found. Impression smears from the tumour matched the cells seen in the vaginal smear. (Fig. 4).

Histopathology indicated a papillary adenocarcinoma of the ovary with C.I.S. of the cervix.

The presence of both types of cells in the smear—that is ovarian and C.I.S.—caused some diagnostic difficulty.

CASE 3

Slide shows the malignant cells in the ascitic fluid of a 68 year old patient (post-menopausal) with bilateral secondaries in the ovaries. (Fig. 5).

As it is not possible to aspirate the Pouch of Douglas in all women, those at a high risk—that is women over 50 and those in whom the ovaries have been retained after hysterectomy-should be studied.

Discussion

The cytologic detection and diagnosis of ovarian cancer is relatively uncommon because aside from the fact that the incidence of ovarian cancer is relatively low as compared to uterine malignancies, the malignant ovarian cells have to penetrate the capsule and traverse the fallopian tube and uterine cavity before they appear in the vagina. This in itself speaks for a lesion that has spread beyond the confines of the organ. For an early diagnosis therefore, it would be more appropriate as suggested by Graham and Bartels (1962) to obtain an aspiration from the Pouch of Douglas or ascitic fluid. However, vaginal cytology in known ovarian tumours is still very interesting and should be routinely employed. In cases of advanced ovarian malignancy, cytology of ascitic fluid gives prompt diagnosis. Further the progress after chemotherapy can be studied by ascitic fluid cytology.

For a good pick-up rate the smears must be technically of high quality and every cyto-technician must be familiar with the cyto-morphology of ovarian cells as they appear in the vaginal pool.

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See Figs. on Art Paper III-IV