



PATHOMORPHOLOGY OF OVARULAR CELL ADENOMAS

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SUMMARY

In this work, we studied the macroscopic and microscopic features of clear cell ovarian adenoma. The results showed that clear cell ovarian adenoma is macroscopic, as a rule, single-chamber, up to 30 cm in diameter, often associated with endometriosis. The microscopic characteristic of clear cell ovarian adenoma is that the tumor epithelium has a diffuse, tubulo-cystic, tubular location, sometimes with papillary growth. Sometimes the epithelial cells of the tumor with abundant light cytoplasm rich in glycogen are flattened, form nests, fields and contain a hyaline-like mass in the lumen of the cysts

KEY WORDS: ovaries, cysts, cystic tumors, adenoma, clear cell adenoma.

THE RELEVANCE OF THE PROBLEM

Light-cell (mesonephral) tumors make up 3-5% of all ovarian tumors or 7-11% of all malignant neoplasms. Histogenetically develop from the integumentary ovarian epithelium and are associated with endometriosis in 25% of all cases. Tumors are predominantly one-sided (95%). The average age of people with a newly established diagnosis is about 53 years (1,2). The macroscopic appearance of this neoplasm is nonspecific - the tumor mass in the ovary can be represented by both cystic and solid components. Necrosis and hemorrhage are uncharacteristic. Until now, malignant clear cell ovarian tumors remain one of the most poorly studied morphological forms of ovarian cancer, due to the extremely low frequency of this pathology. According to the literature, in various clinics, the analysis of clear cell ovarian adenocarcinoma is based on a small number of observations, which does not allow to fully determine the features of the clinical course of the disease, its diagnosis, therapy results and prognosis factors(5,6). Most of the publications are descriptive in nature, based on isolated cases of the disease, and sometimes based on the analysis of literary sources over many years. The

morphological parameters of clear cell adenocarcinoma of the ovaries, which, to one degree or another, can affect the methods of treatment and the outcome of the disease, have not been fully studied. According to the literature (O.K., Khmel'nitsky, 1994), the frequency of mixed epithelial tumors of the ovaries is about 10% of all epithelial ovarian tumors, according to other sources (A.E. Kolosov, J.I.H. Mkrtychyan, 1986) mixed tumors of epithelial origin are found very rarely and even less often diagnosed. Among them, two-component forms predominate, and three-component forms of a tumor are much less often determined. The overwhelming majority of mixed epithelial tumors have a combination of serous and mucinous epithelial structures, much less often - serous and endometrioid, even less often other variants in the form of a combination of serous, mucinous or endometrioid structures with a clear cell epithelial component. All of the above suggests that mixed ovarian epithelial tumors are the least studied ovarian neoplasms and their studies are necessary to develop the correct treatment tactics. The results of the treatment of malignant clear-cell neoplasms of the ovaries remain unsatisfactory. This is due to the low



sensitivity of these neoplasms to chemotherapy, including the use of platinum preparations(7,10). Despite the search for new treatment regimens for clear cell neoplasms, the leading method of treating these tumors is still surgical, the main purpose of which is to remove or maximize the reduction of the mass of tumor tissue. Identification of the main prognostic factors will facilitate the choice of adequate therapy methods and improve the long-term results of treatment of this pathology. A clear cell ovarian tumor was first described in 1899 by Peham N. as "ovarian hypernephroma" because of its similarity to renal cell adenoma. However, in 1939, Schiller W. discovered a histological similarity between the structures of clear cell ovarian adenoma and mesonephric tubules and suggested that it comes from the remains of a primary kidney tumor (11). Tumors of this histogenesis are called the term "mesonephroma" and are divided into the following groups: true mesonephroma, characterized by glomeruloid-like bodies with a single vessel on the leg "glomerulus", tubular structures lined with epithelioid cells, and having the appearance of a wallpaper nail, incapable of producing endogenous mucins stellate cells; parvilocular cystomas, which are characterized by the absence of glomeruloid-like bodies, small cysts scattered in the fibrous stroma, lined with mucin-producing epithelial cells, including those similar to light, optically empty cells; adeno fibroma from the remains of ovarian tissue(13).

The causes of clear cell ovarian tumors are still unknown and are the subject of much discussion. Clear cell ovarian adenocarcinoma was first described in 1899 by Peham N. (12) as "ovarian hypernephroma" because of its similarity to renal cell carcinoma. However, in 1939, Schiller W. (12) found a histological similarity in the structures of clear cell ovarian carcinoma with mesonephral tubules and suggested that it originates from the remains of a primary kidney tumor. Tumors of this histogenesis, he called the term "mesonephroma" and divided them into the following groups: 1. true mesonephroma, characterized by glomeruloid bodies with a single vessel on the stem of the "glomerulus", tubular structures lined with epithelioid cells, and having the form of a wallpaper nail, "hop-nail" unable to produce mucin and solid areas formed by endothelial-like stellate cells; 2. Parvilocular cystomas, which are characterized by the absence of glomeruloid bodies, small cysts scattered in the fibrous stroma, lined with mucin-producing epithelial cells, including those similar to "hop-nail" cells, or light, optically empty; 3. Adeno fibromas from the remains of ovarian tissue. The author considered all the listed types of neoplasms to be histologically related, but he singled out the "true mesonephroma" in a special group (1, 3). In 1944, Saphir O. and

Lackner J. presented 2 observations of "hypernephroid carcinoma" and proposed an alternative term - "clear cell carcinoma" (9). Subsequently, the term "clear cell adenocarcinoma" began to refer to tumors, once described by Schiller W. as "parvilocular cystomas", and hypernephroid tumors of the ovaries, described by Saphir O., Lackner J.

All these types of neoplasms are histologically related, however, "true mesonephroma" is allocated in a special group (3,4,5).

PURPOSE OF WORK

To study the macroscopic and microscopic features of clear cell ovarian adenoma.

MATERIAL AND RESEARCH METHODS

The research material was the operationally removed cystic ovarian masses with a diagnosed clear cell ovarian tumor and studied in the Department of General Pathology of the RPAC of the Ministry of Health of the Republic of Uzbekistan for 2009-2019. Histological sections were stained with hematoxylin-eosin, SIC reaction, which was studied under a NOVEL light microscope under a lens 10,20,40.

RESULTS

The results of the study showed that macroscopically clear cell ovarian adenoma was manifested by large pelvic tumors, sizes ranged from 2-3 to 20-30 cm. Sometimes it ranged from 2 to 30 cm. The tumor was a cystic mass, usually single-chamber, with one or several solid nodules yellow or light brown in color, bulging into the cavity of the cyst. Brush contains serous fluid or mucin. Sometimes, the tumor comes from an endometrioid cyst, the fluid is "chocolate" in color, and brown "islands" may be present in the cyst lining. The outer surface of the tumor is often uneven due to the presence of adhesions, the cause of which is concomitant endometriosis.

The microscopic characteristics of clear cell adenomas are characterized by diffuse, tubulo-cystic (Fig. 1), papillary and less often trabecular growth patterns. Tumor cells of a clear cell adenoma had a prismatic shape with various contours of the cytoplasmic membranes, abundant glycogen and an eccentric nucleus (Fig. 2). The main type of cellular elements are light, clove and flattened cells. Light cells resemble those of the tubules of the kidney. Their cytoplasm is rich in glycogen and may contain lipids. Some cells are found in most light-cell tumors and are characterized by scanty cytoplasm, the presence of a vesicle-like nucleus, which protrudes



into the lumen of the tubules or cystic formations (Fig. 3). Complex papillae with hyaline bodies may occur (Fig. 4). Mucin is often present in the lumen of tubular structures and cysts, but like serous and endometrioid tumors, it is usually located on the apical surface of cells. During histological examination of areas of a clear cell tumor, solid, glandular, tubular, papillary, cystic areas, or combinations thereof can be found. According to the literature, clear cell carcinomas are often found in mixed forms in combination with endometrioid tumors (4,10). In the literature, 9 cases of clear cell ovarian adenomas are reported, in which a significant proportion of cells with abundant and eosinophilic cytoplasm were present. These are the so-called "oxyphilic clear cell adenomas", which pathologists can often be confused with tumors of other histological types. The diagnosis was made on the basis of the detection in each studied neoplasm of signs of clear cell adenoma: tubules and cysts lined with cubic, flattened cells, nests and cell fields with abundant light cytoplasm containing glycogen, as well as the presence of an adenofibromatous component. In cases where the tumor contains oxyphilic cells, it is necessary to perform a complete examination of the tumor node in order to identify areas of the tumor typical of clear cell adenoma and to avoid erroneous diagnosis (12).

DISCUSSION

Describing the features of tumor growth of clear cell adenocarcinoma, many authors note the predominant unilateral lesion of the ovaries - in 80%

of cases (1,6,9). Macroscopic features of clear cell ovarian adenocarcinomas. Clear cell ovarian adenocarcinoma is usually represented by large pelvic tumors. According to K. Behbakht et al. the size of the tumor in clear cell ovarian cancer ranges from 2-3 to 20-30 cm. Most authors describe the size of the tumor, which ranges from 2 to 30 cm (2, 6, 9, 10). Macroscopically, clear-cell adenocarcinomas are usually represented by a cystic formation, usually unicameral, with one or more solid yellow or light brown nodules bulging into the cyst cavity. Cysts may contain serous fluid or mucin. However, in cases where the tumor originates from an endometrioid cyst, the fluid may be "chocolate" in color, and brown "islets" may be present in the cyst lining. The outer surface of the tumor is often uneven due to the presence of adhesions, which are caused by concomitant endometriosis (8). Microscopic characteristics of clear cell ovarian cancer.

CONCLUSIONS

1. The clear cell ovarian adenoma is macroscopically, as a rule, single-chamber, up to 30 cm in diameter, often combined with endometriosis.
2. The microscopic characteristic of clear-cell ovarian adenoma is that the tumor epithelium has a diffuse, tubulo-cystic, tubular location, sometimes with papillary growth
3. Sometimes the epithelial cells of the tumor with abundant light cytoplasm rich in glycogen are flattened, form nests, fields and in the lumen of the cysts contain hyaline-like mass.

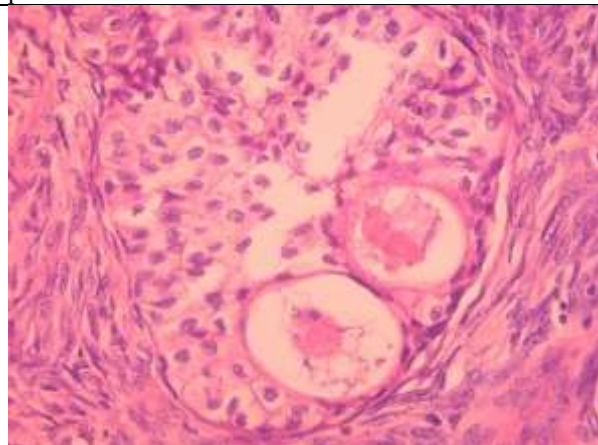


Figure 1. Diffuse and tubulo-cystic arrangement of light adenoma cells. Coloring: G.E. X: approx. 10, vol. 40

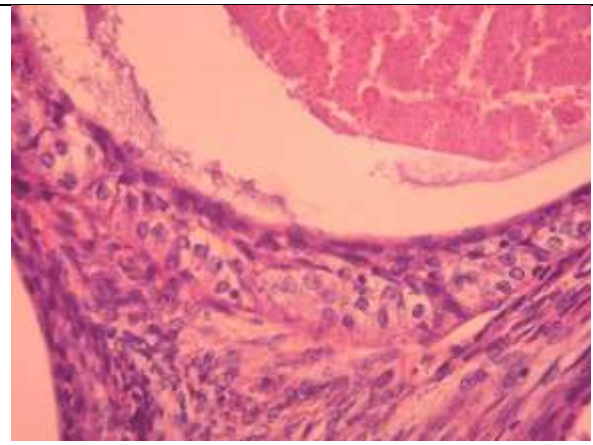


Figure 2. There is a lot of glycogen in the cytoplasm of the bright cells of the adenoma. Coloring: G.E. X: approx. 10, vol. 20

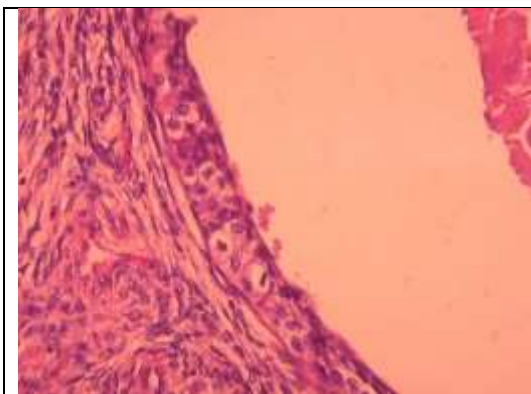


Fig 3. Multirow light epithelium in the cyst wall. Coloring: G.E. X: approx. 10, vol. 20

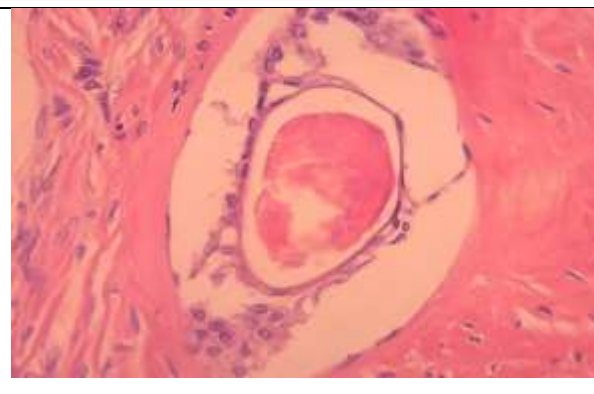


Figure 4. Hyaline bodies in the lumen of the cyst. Coloring: G.E. X: approx. 10, vol. 20

Thus, malignant clear cell neoplasms of the ovaries have some features of the clinical course. This disease is most common in the older age groups - from 51 to 60 years. For clear cell neoplasms ovaries are not characterized by a family hereditary history. Unlike other tumors histotypes, patients with malignant clear-cell neoplasms have a history of a greater number of pregnancies - from 2 to 4. However, about 20% of patients suffered from primary or secondary infertility. In almost half of the observations the disease was preceded by inflammation of the uterine appendages, pathological processes in the endometrium, uterine myoma, and in 1/3 of cases clear cell neoplasms were accompanied by endometriosis

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