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# OVARIAN LEYDIG CELL TUMOR: HISTOPATHOLOGICAL REVIEW

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## INTRODUCTION

The ovaries are almond-shaped organs of the female reproductive system, measuring approximately 3 cm on the longest axis, responsible for the production of progesterone and estrogen, in addition to storing eggs. Histologically, they have four layers, the outermost being the germinal epithelium, below the tunica albuginea, the cortical layer, where follicles develop, and the medullary layer, innermost, consisting of loose connective tissue. Ovarian Leydig cell tumor is a rare subtype of stromal neoplasia of the ovarian sex cord. It is known that these cells are present but must regress during sexual differentiation, still in the embryonic period.

## GOALS

Review the histology of the ovary, specifically the ovarian stroma, as well as understand the formation of ovarian Leydig cell tumors, highlighting the anatomopathological analysis and its correlation with clinical practice.

## METHODOLOGY

Bibliographical research of scientific articles was carried out on the Pubmed data platform, in the period of July 2023. The descriptors were used: "cell", "Leydig", "tumor" and "women". The period of publications was from 2013 to 2023, being in English and Portuguese. After analysis, 10 publications were selected based on the eligibility criteria. Furthermore, the book "Basic Histology, 13th edition" by Junqueira and Carneiro.

## RESULTS

The ovary is composed, in addition to the follicles in different phases and the corpora lutea, by the ovarian stroma. The stroma is made up of loose connective tissue and may contain Leydig and Sertoli cells, but this is only in cases where there has not been complete regression after sexual differentiation. Leydig cell tumor is an exaggerated proliferation of these cells in the stroma, representing 0.5% of ovarian neoplasms and can appear in any age group. Regarding symptoms, in more than 75% of cases it causes progressive virilization, preceded by anovulation, amenorrhea and defeminization. In postmenopausal patients, there is vaginal bleeding. Other signs include: acne, hirsutism, cliteromegaly, alopecia and sporadically changes in the nails. The symptoms are caused by the production of androgens by the tumor. Laboratory tests identify an increase in the levels of these hormones, and abdominal radiological evaluation does not present any characteristic findings. Treatment is surgical with removal of the affected ovary. In the histopathological analysis of the lesion, there is the presence of cells with eosinophilic cytoplasm and Reinke crystals, and associated stromatosis may also appear. The immunohistochemical reaction shows positivity for Alpha-Inhibin and Vimentin, which are important markers to establish the diagnosis, in addition to other antibodies such as Cytokeratin AE1/AE3, Smooth Muscle Actin, EMA and S100 protein. The mitotic index is low, which indicates an indolent course of the disease with a good prognosis.

## CONCLUSION

Leydig cell tumor is an uncommon neoplasm that affects the ovary, culminating in excessive production of male sex hormones. The case investigation is based on clinical data, imaging and laboratory tests. Histopathological analysis of the lesion, complemented with an immunohistochemical profile containing markers of this cell type, allows accurate diagnosis for patients.

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