

Clinicopathological and Immunohistochemical Study of Ovarian Sex Cord-Stromal Tumors and Their Histological Mimics

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Abstract : Background: Primary ovarian neoplasms comprise a heterogeneous group of tumors of three main subtypes: surface epithelial, germ cell, and sex cord-stromal. The wide morphological variation within and between these groups can result in diagnostic difficulties. Gonadal sex cord-stromal tumors (SCST) represent one of the most heterogeneous categories of human neoplasms, because they may contain various combinations of different gonadal sex cord and stromal element. Aim: The aim of this work is to highlight the clinicopathological characteristics of SCST and to assess the value of alpha-inhibin and calretinin in the distinction between SCST and their mimics. Material and methods: This study was carried out on 100 cases using full tissue sections; 70 cases were SCST and 30 cases were histological mimics of SCST. The cases were studied using immunohistochemically using alpha-inhibin. In addition, an ovarian tissue microarray containing 170 benign and malignant ovarian neoplasms was also studied immunohistochemically for calretinin expression. The ovarian microarray included 14 SCST, 59 ovarian serous borderline tumors, 17 mucinous borderline tumors, 10 mucinous adenocarcinomas, 32 endometrioid adenocarcinomas, 34 clear cell carcinomas, and 4 germ cell tumors. Results: 99% of SCST examined using full tissue sections exhibited positive cytoplasmic staining for inhibin. On the contrary, only 7% of the histological mimics (P value < 0.0001). 86% of SCST in the tissue microarray were positive for calretinin with nuclear and/or cytoplasmic staining compared to only 7% of the other tumor types (P value < 0.0001). Conclusions: SCST have characteristic clinicopathological and immunohistochemical features and their recognition is crucial for proper diagnosis and treatment. Alpha-inhibin and calretinin are of great help in the diagnosis of sex cord-stromal tumors.

Keywords : calretinin, granulosa cell tumor, inhibin, sex cord-stromal tumors

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