# Dedifferentiated carcinoma of the ovary. A case report

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**SUMMARY**

We report the case of a 54-year-old female with dedifferentiated carcinoma of the ovary. Grossly, both ovaries were affected by a tumor of up to 25 mm (right ovary) and 220 mm (left ovary) in diameter. Microscopically, the tumors of both ovaries showed features of well differentiated endometrioid carcinoma with mucinous differentiation. Moreover, in the left ovary there was an undifferentiated solid component consisting of larger cells. Immunohistochemically, the undifferentiated component showed diffuse vimentin positivity and focal expression of cytokeratin 18. Other markers examined including PAX8, estrogen receptors and progesterone receptors were all negative. Dedifferentiated carcinomas consist of an undifferentiated epithelial component and a component of endometrioid carcinoma of FIGO grade 1 or 2. Clinically, they represent aggressive tumors with unfavorable prognosis mostly occurring in the endometrium. To the best of our knowledge, thus far only 6 cases arising in the ovary have been reported in the literature.

**Keywords:** ovarian carcinoma – dedifferentiated carcinoma – undifferentiated carcinoma – low-grade endometrioid carcinoma

## Dediferencovaný karcinom ovaria – kazuistika

**SOUHRN**

Prezentujeme případ 54 leté ženy s dediferencovaným karcinomem ovária. Makroskopicky byla obě ovária prostoupena nádorovými strukturami dosahujícími v největším rozměru 25 mm (pravé ovárium) a 220 mm (levé ovárium). Mikroskopicky se jednalo o nádory tvořené strukturami dobře diferencovaného endometroidního karcinomu. V levém ováriu však byla kromě toho ještě zastižena nediferencovaná solidní komponenta tvořená většími buňkami. Při imunohistochemickém vyšetření byla tato komponenta difúzně pozitivní při průkazu vimentinu a fokálně při průkazu cytokeratinu 18. Ostatní vyšetřované markery včetně PAX8, estrogenních a progesteronových receptorů byly negativní. Dediferencované karcinomy ovária jsou vzácné nádory tvořené komponentou nediferencovaného karcinomu a endometroidního karcinomu grade 1 nebo 2. Klinicky se jedná o agresivní nádory se špatnou prognózou, které se častěji vyskytují spíše v endometriu, v ováriu bylo dosud popsáno pouze 6 případů.

**Klíčova slova:** karcinom ovária – dediferencovaný karcinom – nediferencovaný karcinom – low-grade endometroidní karcinom

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Dedifferentiated and undifferentiated carcinomas of the female genital tract are rare, clinically aggressive tumors, mostly arising in the endometrium (1,2). While undifferentiated carcinomas are malignant epithelial tumors without any differentiation, dedifferentiated carcinomas also contain, apart from the undifferentiated component, a second component of endometrioid carcinoma of FIGO grade 1 or 2. This association was first reported in endometrial tumors, and later on the dedifferentiated/undifferentiated carcinoma was also described in the ovary (3). Similar to the endometrial tumors, this type of carcinoma is associated with an unfavorable prognosis. To the best of our knowledge, only 6 cases of dedifferentiated carcinoma of the ovary have been described in literature to date (3-5).

## CASE REPORT

### Clinical history

A 54-year-old woman with lower extremity pain was referred by a local physician for a complex examination, including an abdominal ultrasound which revealed some "suspect findings". During the following check-up, a bilateral ovarian tumor was detected and the patient was referred to the oncogynecological center where she underwent a hysterectomy with bilateral adnexectomy. Subsequently, she received six cycles of adjuvant carboplatin and paclitaxel chemotherapy. She was also genetically tested for hereditary mutations in 13 genes including BRCA1and BRCA2, via the NGS and MLPA method, but no significant variants in coding sequence were found. Currently, 9 months after the surgery, the patient is under regular follow-ups with no signs of the disease.

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## MATERIALS AND METHODS

Sections from formalin-fixed, paraffin-embedded tissue blocks were stained with hematoxylin-eosin. Selected sections were analyzed immunohistochemically using the avidin-biotin complex method with antibodies directed against the following antigens: cytokeratin AE1/AE3 (1:50, Dako, Glostrup, Denmark), cytokeratin 18 (clone DC 10, dilution 1:50, Dako), cytokeratin 7 (clone OV-TL 12/30, 1:50, Dako), Ki-67 (clone MIB-1, 1:50, Dako), estrogen receptors (ER, clone 6F11, 1:50, Novocastra, Newcastle, UK), progesterone receptors (PR, clone 16, 1:200, Novocastra), p53 (clone BP 53-12, 1: 200, Zytomed Systems, Berlin, Germany), synaptophysin (clone DAK-SYNAP, 1:50, Dako), chromogranin A (clone LK2H10, 1:400, Zytomed), S-100 protein (1:1600, Dako), HNF-1 β (polyclonal, dilution 1:500, Sigma-Aldrich, Prestige