

# Sebaceous adenoma arising in mature cystic teratoma of the ovary. Case report

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## SUMMARY

We report the case of a 44-year-old female with sebaceous adenoma arising in mature cystic teratoma of the ovary. The patient had a tumor in the left ovary; 125 x 90 x 70 mm. Microscopically, the tumor consisted of structures typical of dermoid cysts. However, large areas of sebaceous proliferation were found. These areas were comprised of sebaceous nodules with features similar to a sebaceous adenoma of the skin. Immunohistochemically, the tumor showed "wild-type" expression of p53 and low proliferative activity (Ki-67 index < 5%). To verify the possibility of Muir-Torre syndrome we performed immunohistochemical examination of DNA mismatch repair proteins expression. However, all four proteins examined (MSH2, MSH6, MLH1, PMS2) were positive. Sebaceous adenoma arising in mature teratoma of the ovary is rare. To the best of our knowledge, only six cases have been reported in the literature to date.

**Keywords:** sebaceous adenoma – mature cystic teratoma – ovary

## Sebaceous adenom vzniklý ve zralém cystickém teratomu ovária. Kazuistika

### SOUHRN

Prezentujeme případ 44 leté ženy se sebaceous adenomem vzniklým ve zralém cystickém teratomu ovária. Nádor lokalizovaný v levém ovariu byl velikosti 125 x 90 x 70 mm. Mikroskopicky se jednalo o nádor tvořený typickými strukturami dermoidní cysty, nicméně s poměrně rozsáhlými oblastmi sebaceous proliferace. Tyto oblasti byly tvořeny sebaceous noduly vykazujícími obdobné znaky jako sebaceous adenom kůže. Imunohistochemicky jsme prokázali „divoký typ“ exprese proteinu p53 a nízkou proliferativní aktivitu (Ki-67 index < 5%). K ověření možnosti, že jde o syndrom Muir-Torre, jsme provedli imunohistochemické vyšetření exprese "DNA mismatch repair" proteinů. Vyšetření s protilátkami proti všem 4 analyzovaným proteinům (MSH2, MSH6, MLH1, PMS2) vyznělo pozitivně. Sebaceous adenom vznikající ve zralém teratomu ovária je vzácný, doposud bylo popsáno pouze 6 takových případů.

**Klíčová slova:** sebaceous adenom – zralý cystický teratom – ovarium

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We report the case of a 44-year-old patient with sebaceous adenoma arising in mature cystic teratoma of the ovary. Sebaceous tumors arising in mature cystic teratomas are rare and to the best of our knowledge, there have been only six prior reports of sebaceous adenoma (1-4). In one of the previous cases, association of ovarian sebaceous adenomas with Muir-Torre syndrome, a variant of Lynch syndrome, was described (2). In our case this possibility was not confirmed by immunohistochemical examination with antibodies against mismatch repair (MMR) proteins.

## 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

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antigens: p53 (clone DO7, 1:50, Immunotech, Quebec, Canada), MLH-1 (clone G168-15, 1:50, Zytomed Systems, Berlin, Germany), MSH-2 (clone FE11, 1:50, Zytomed Systems), MSH-6 (clone Fe 11, 1:50, Zytomed Systems), PMS-2 (clone EPR3947, ready-to-use, Zytomed Systems), and Ki-67 (clone MM1, 1:50, Diagnostic BioSystems, Pleasanton, California). Antigen retrieval was performed. This was comprised of pretreatment in 0.01 M citrate buffer (pH 6.0) for 40 min in a water bath at 98°C for p53, MSH-1 and MSH-6. Heat-induced epitope retrieval was performed in 0.01M citrate buffer (pH 9.0) for PMS-2 and MLH-1. Only nuclear staining was regarded as positive for all antibodies.

## RESULTS

Grossly, the left adnexal tumor measured 125 x 90 x 70 mm. The dissection of the tumor revealed a cavity filled with fatty material similar to normal sebum, and hair surrounded by a firm capsule of varying thickness. The inner lining of the cyst was predominantly smooth, with only one yellowish tumorous mass measuring 40 x 30 x 10-15 mm.

Microscopically, the majority of the tumor was composed of mature cystic teratoma structures, including skin and skin adnexa, and also contained respiratory-type epithelium. However, the whole yellowish tumorous mass showed an abnormal proliferation of sebaceous cells forming nodules with features similar to a sebaceous adenoma of the skin (Fig. 1). This part of the lesion had a lobular growth pattern and a pushing border with ad-