



# Malignant Transformation of Ovarian Mature Teratoma: About a Case and Literature Review

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Received 07 October 2019;

Accepted 31 October 2019;

Published 10 November 2019

## Abstract

The cancerous teratoma of the ovary is a rare entity. We report the case of a 57-year-old woman post menauposal with malignant transformation of ovarian mature teratoma who was treated in the gynecology and medical oncology departments of CHU HASSAN II in Fez. The patient underwent bilateral adnexectomy and a total hysterectomy with omentectomy. The evolution was marked by the appearance of carcinomatous nodules postoperatively. She received chemotherapy with platinum and taxanes .she had complete remission after 6 cycles and has remained under good control at present.

**Keywords:** *ovary-malignant transformation-squamous cell carcinoma-menopause*

## Introduction

Mature or cystic teratoma of the ovary is a benign non-seminomatous germ cell tumor<sup>[1]</sup>. The malignant transformation is a rare complication that is observed in 1 to 2% of cases.<sup>[2]</sup>

Squamous carcinoma is the most common malignancy followed by adenocarcinoma and melanoma<sup>[3][4]</sup>.

The mechanism of the malignant transformation arising in ovarian MCT is not clear but considering the fact that 80% of MCTs are diagnosed during the reproductive age, malignant transformation seems to be related to the long-term presence of nonremoved MCT in the abdomen<sup>[3]</sup>.

It is usually observed in menopausal women.<sup>[5][6]</sup> This cancerization occurs in epidermoid carcinoma in 80% of cases, more rarely in melanoma or sarcoma<sup>[7]</sup>.

The prognosis of MCT is highly dependent on age, stage, and optimal cytoreduction. Adjuvant treatment has not been standardized, although our experience supports the use of combination platinum/taxane chemotherapy<sup>[8]</sup>.

## Case Presentation

We report a case of a 57-year-old multiparous woman, post menopausal, who had been cholecystectomized 7 years ago .She had pelvic pain with progressive increase in abdominal volume for six months without bleeding or other associated signs.

The clinical exam had revealed an abdominopelvic mass of 6 cm. Pelvic ultrasound showed a non-Dopplerized heterogeneous mass measuring 9 cm in the right ovary. The abdominal CT complement showed a large heterogeneous right ovary in favor of an ovarian dermal cyst measuring 87 mm. (figure)



Figure: Radiological image of a carcinogenic mature teratoma

The patient had a right adnexectomy. On macroscopic examination, it was a cystic formation measuring 10 / 8cm containing a compact yellow substance and hair.

Microscopic examination showed a benign tumoral proliferation made of cystic formations lined by an epithelium of both cylindrical and squamous respiratory type associated with carcinomatous tumor proliferation.

The pathological study concluded in mature teratoma carcinized in squamous cell carcinoma.

The second surgical procedure consisted of a total hysterectomy with a left adnexectomy and an omentectomy, the pelvic and lumbar aortic lymphadenectomy were not performed because of the hemorrhagic dissection of the peritoneum and the hypotension of the patient installed in peroperative. An Histological exam did not reveal any tumor residue.

A postoperative TAP CT showed an infiltration of peritoneal sheets with a carcinomatosis nodule in the parietocolic left atrium. The patient received chemotherapy 4 courses of carboplatin paclitaxel with complete response and disappearance of carcinomatosis.

After six courses of chemotherapy in total, the patient remained under good control at present.

## Discussion

The carcinogenic mature teratoma of the ovary is a dermoid cyst in which a carcinoma develops on one of its mature components.<sup>[9]</sup> This cancerization is seen in 1 to 3% of cases.<sup>[1][10]</sup> The risk of malignant transformation of a dermoide cyst increases with age<sup>[11][12]</sup>.

More than 75% of dermoid cysts are carcinized in post menopause<sup>[13][3]</sup>. The average age is 54<sup>[13]</sup>. Our patient was 57 years old and she was in the menopause.

Clinically, the symptomatology is similar to that of benign ovarian tumors. The most frequent manifestations are a pelvic pain, an abdominal distension and a transit disorders<sup>[11][13]</sup>.

Radiologically, there are signs suggestive of malignancy including invasion of organs, increased wall thickness, the presence of haemorrhagic necrosis and carcinomatosis nodules<sup>[10][13][3]</sup>.

Biologically, there is a serum marker useful in preoperative diagnosis and early detection of recurrence. It is SCAA (squamous cell carcinoma antigen) but a low level does not eliminate a carcinoma teratoma<sup>[14][15][16]</sup>.

All histological types can be found: adenocarcinoma, squamous cell carcinoma, undifferentiated carcinoma, more rarely sarcoma melanoma and lymphoma<sup>[14][17]</sup>.

Surgical treatment remains a controversial subject. The unilateral adnexectomy is recommended in premenopausal women for stage IA<sup>[18]</sup>.

For postmenopausal women, a wider exeresis surgery is recommended regardless of the stage<sup>[13][18][19]</sup>.

Regarding chemotherapy, in localized forms, the treatment is similar to that of ovarian cancer, some authors recommend the use of alkylating agents<sup>[18][19]</sup>. It is the same in metastatic forms.

In the literature, radiotherapy does not bring any benefit<sup>[19]</sup>.

The prognosis remains pejorative. It depends mainly on the grade of the vascular invasion of the break-in of the ovarian capsule but also on the histological type<sup>[11][16]</sup>.

## Conclusion

The malignant transformation of ovarian mature teratoma is a rare entity. The diagnosis of certainty remains anatomopathological. The treatment is multidisciplinary depending on the stage of the disease combining surgery chemotherapy and radiotherapy in some cases.

## References

- [1] Griffiths D, Wass J, Look K, Sutton G. Malignant degeneration of a mature cystic teratoma five decades after discovery. *Gynecol Oncol*. 1995;59:427-9
- [2] Wei F, Jiang Z, Yan C. Analysis of 20 mature ovarian cystic teratoma cases in postmenopausal women. *Chin Med J (Engl)*. 2001;114:137-8
- [3] Rim SY, Kim SM, Choi HS. Malignant transformation of ovarian mature cystic teratoma. *International Journal of Gynecological Cancer*. 2006 Jan;16(1):140-4

- [4] Sel G. Case Report of Bilateral Dermoid Cyst Containing Tooth and Bone with Unilateral Ovarian Torsion. *Batu Karadeniz Tıp Dergisi*. 2018;2(2):182-5.
- [5] Peterson WF. Malignant degeneration of benign cystic teratoma of the ovary. A collective review of the literature. *Obstet Gynecol Surv* 1957; 12: 793-830.
- [6] Belhaj Yahia Nada, Saidani Ahmed, Triki Haythem, Bel Hadj Anis, Mannai Saber, Houissa Hichem. Kyste dermoïde dégénéré: à propos de deux cas et revue de la littérature.
- [7] Rose PG, Takwk, Real FR. Squamous cell carcinoma arising in a mature cystic teratoma with metastasis to Para aortic nodes. *Gynecol Oncol* 1993; 50:131-3.
- [8] Sakuma M, Otsuki T, Yoshinaga K, Utsunomiya H, Nagase S, Takano T, Niikura H, Ito K, Otomo K, Tase T, Watanabe Y. Malignant transformation arising from mature cystic teratoma of the ovary: a retrospective study of 20 cases. *International Journal of Gynecologic Cancer*. 2010 Jun 1;20(5):766-71.
- [9] ChbaniL, etal. Transformation maligne épithéliale d'un tératome mature de l'ovaire : à propos d'un cas. *Rev Fran Lab* 2008; 407:99-102.
- [10] J Drissi, A Mouhtaram, L Boukhani, H Rais, R Belbaraka, A El Omrani, M Khouchani .Transformation maligne d'un tératome mature de l'ovaire : à propos d'un cas.
- [11] Belhaj Yahia Nada<sup>1</sup>, Saidani Ahmed<sup>2</sup>, Triki Haythem, Bel Hadj Anis,<sup>3</sup>Mannai Saber, Houissa Hichem. Kyste dermoïde dégénéré,à propos de deux cas et revue de la littérature
- [12] Argoitia X, Duga I, Labeyrie E, Toledo L. Dégénérescence des kystes dermoïdes. A propos d'un cas de transformation maligne. *Gynecol Obstet Fertil*. 2007; 35:1005-8.
- [13] Guedira, R. Znagui, L. Boukhanni, L. Haqqi, L. El Barnoussi, A. Filali, A.H. Alami, R. Bezad, C. Chraïb .Tératome cancérisé de l'ovaire.
- [14] Mounia Ziyadi, Ihssane Hakim, Khalid Guelzim, Jaouad Kouach, Driss Moussaoui Mhammed Dehayni The Mature Teratoma Cancerise of the Ovary: About a Case and Review of the Literature.
- [15] L. Dos Santos, E. Mok, A. Iasonos, K. Park, R. A. Soslow, Aghajania, et al. Squamous cell carcinoma arising in mature cystic teratoma of the ovary: a case series and review of the literature *Gynecol Oncol*, 105 (2007), pp. 321-324.
- [16] K. Miyazaki, T. Tokunagat, H. Katabuchi, T. Ohba, H. Tashiro, H. Okamura Clinical usefulness of serum squamous cell carcinoma antigen for early detection of squamous cell carcinoma arising in mature cystic teratoma of the ovary *Obstet Gynecol*, 78 (1991),pp. 562-565.
- [17] Madison JF, Cooper PH. A histiocytoid (epithelioid) vascular tumor of the ovary: occurrence within a benign cystic teratoma. *Mod Pathol* 1989; 2:55-8.
- [18] Abdi Ahmed Bonahy,<sup>1</sup>& Houssam Sabbah,<sup>2</sup> Ahmed Haïba Med Vadell,<sup>3</sup> et Nacer Eddine Med Baba Tératome cancérisé :a propos d'un cas avec revue de la littérature.
- [19] Hackethal A, Brueggmann D, Bohlmann MK, Franke FE, Tinneberg HR, Münstedt K. Squamous cell carcinoma in mature cystic teratoma of the ovary: systematic review and analysis of published data. *Lancet Oncol*. 2008;9(12):1173-80.