International Journal of Academic Health and Medical Research (IJAHMR)
ISSN: 2643-9824
Vol. 9 Issue 4 April - 2025, Pages: 43-47

Dermoid cyst: A case report.

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ABSTRACT: *We report a case of dermoid cyst in a 36-year-old nulliparous patient who presented for one year with menstrual cycle disorders. The diagnosis was suspected by pelvic ultrasound and MRI and confirmed by anatomopathological study with absence of histological signs of malignancy.*

Keywords: dermoid cyst; mature ovarian teratoma; immature teratoma; germ cell tumor; cystectomy; malignant transformation.

INTRODUCTION:

The dermoid cyst or mature ovarian teratoma (MOT) is the most common ovarian germ cell tumor, derived from totipotent germ cells. It is sometimes bilateral and carries a risk of malignant transformation. Diagnosis is suspected by pelvic ultrasound and MRI, and confirmed by pathology. Torsion is the most frequent serious complication. Treatment ranges from abstention and surveillance to cystectomy or oophorectomy, depending on size. Recurrence is possible and sometimes associated with the appearance of bilateral and multiple dermoid cysts.

CASE REPORT:

A 36-year-old nulliparous patient presented with spaniomenorrhea, a disturbance of the menstrual cycle. Pelvic ultrasound showed a cystic image with a mixed hyperechoic component suggestive of a right ovarian dermoid cyst measuring 3.60/3.23 cm. Pelvic MRI was consistent with a right ovarian dermoid cyst. Tumour markers (CA 125, alpha-feto-protein (AFP), HCG) were normal. The patient underwent cystectomy by laparotomy. The cyst and its wall were referred for anatomopathological study, which showed a dermoid cyst and no histological signs of malignancy.

Figure 1: *Pelvic ultrasound mixed hyperechoic component suggestive of a dermoid cyst of the right ovary measuring 3.60/3.23 cm.*

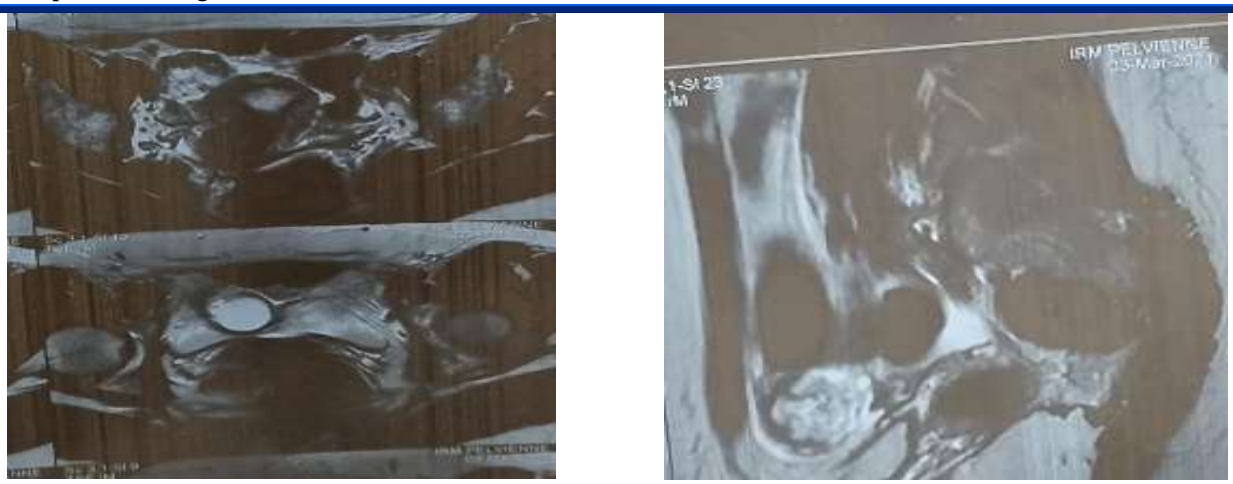

Figure 2: *Pelvic MRI showed a right ovarian dermoid cyst.*

Figure 3: *dermoid cyst of the right ovary measuring 3,6/ 3,23 cm (A), cyst wall measuring 7/0,5 cm (B). Both surgical specimens were sent for anatomopathological study.*

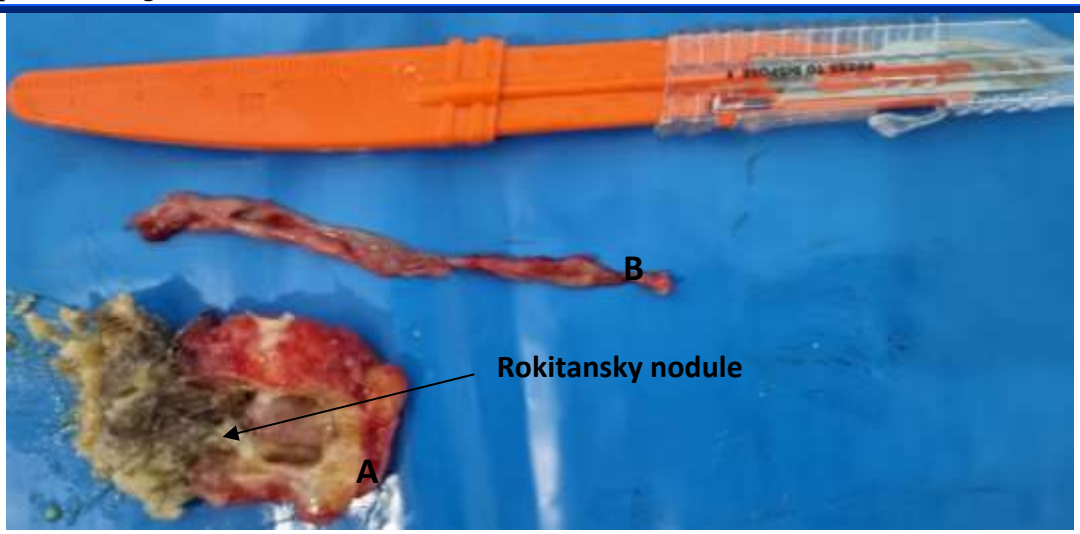

Figure 4: *dermoid cyst of the right ovary with fatty content and presence of hair inside the cyst (A) and rokitansky nodule, cyst wall (B).*

DISCUSSION:

Germ cell tumors are the second most common tumor of the ovary, after epithelial tumors. Teratomas are more common in young women, and are mainly located in the ovaries. They can also be found in the brain, in the pituitary or epiphysis, or even in the mediastinum or retroperitoneum.

An ovarian teratoma is a benign or malignant germ cell tumor derived from pluripotent germ cells. It is composed of tissues derived from one or more of 3 embryonic cell lineages: the ectoderm, giving nerve tissue, skin covering, pilosebaceous appendages and teeth; the mesoderm, giving fat, muscle, bone and cartilage; and finally the endoderm, giving intestinal or bronchial epithelium and thyroid tissue.

There are 3 types of teratoma, depending on tissue differentiation: mature teratoma is the most common, immature and monodermal are much rarer.

Mature teratomas are the most common benign ovarian tumors, accounting for 99% of ovarian teratomas and 10-20% of benign ovarian cysts. It is predisposed to the right ovary [1], sometimes bilaterally. It is a benign solid tumor composed solely of mature tissue. It is composed of at least 2 of the 3 stem cell lineages. It frequently presents in a cystic form (dermoid cyst) containing a solid portion corresponding to Rokitansky nodule, composed of a mixture of mature tissues from the 3 embryonic layers (dander, teeth or calcifications, muscle or nerve tissue, etc.). The cyst is usually rich in fat, an almost pathognomonic sign of a teratoma. Fat is present in a teratoma in 2 forms: sebum, produced by the pilosebaceous appendages and filling the cyst cavity, and the fatty tissue visible in the walls of the cyst or in the Rokitansky nodule (adipocytes), sometimes associated with granulation tissue (lipophagic granuloma).

Mature ovarian teratomas (MOT) are often asymptomatic. It may manifest as menstrual cycle disorders such as spaniomenorrhea or pelvic pain, or as an inaugural complication: compression with urinary signs and transit disorders, torsion, hemorrhage, rupture or infection.

Imaging remains the mainstay of the diagnosis of mature teratomas of the ovary. Pelvic ultrasound shows a cystic, solid or mixed mass, while pelvic MRI better characterizes the tumor in view of its fatty component and calcifications. Imaging is not sufficient to differentiate between mature and immature teratomas [2]. Pelvic scanner remains the examination of choice, superior to ultrasound and MRI [3].

If MOT is suspected, it is not necessary to measure tumor markers. However, in cases of suspected malignant germ cell tumour, it is recommended to measure CA 125, AFP, HCG, LDH and to perform a thoracic-abdominal-pelvic scanner.

For asymptomatic dermoid cysts less than 4 to 6 cm in size, abstention and surveillance are an option. On the other hand, surgery (cystectomy by laparoscopy or laparotomy, or sometimes oophorectomy, depending on the size of the teratoma) is essential for cysts that are symptomatic, large or change on imaging. Mature teratomas may degenerate into immature teratomas in 1-3% of cases [4], mainly in older post-menopausal women and for lesions larger than 10 cm.

Immature teratomas account for 3% of teratomas, 1% of all ovarian cancers and 20% of germline ovarian malignancies [5]. Squamous cell carcinoma is the most frequently reported malignant transformation in the literature [6].

No diagnostic criterion can confirm malignancy before anatomopathological study, but some clinical, biological and radiological elements predictive of malignancy have been stated by several authors. The main criteria pointing towards malignant transformation are the patient's age and the size of the MOT. The risk of transformation is significantly related to age, and carcinogenesis of a MOT should always be suspected in post-menopausal women [7].

A tumor size greater than 9.9 cm is highly suggestive of malignancy in 86% of cases, according to some authors [8], whereas the risk of malignant transformation is low if the size of the MOT is less than 6 cm [3].

Another important criterion is the growth rate of the cyst, which can be monitored by ultrasound. Any increase in the size of a dermoid cyst in the menopausal period, or any growth in excess of 2 cm per year during genital activity, should raise the suspicion of malignant transformation [3].

Radiological criteria for malignant transformation include invasive growth with irregular margins crossing the contrast-enhanced teratoma wall, the detection of solid elements within a liquid content, and the presence of areas of necrosis and haemorrhage [3].

Squamous cell carcinoma (SCC) associated antigen is the most sensitive marker for suspected malignancy [9]. CA 19-9 and CA 125 are increased in 50% of cases of carcerized dermoid cysts [10].

The finding at laparotomy of foci of haemorrhage and necrosis or invasion of neighbouring organs are also criteria that may point to malignancy [9].

Diagnosis of certainty relies on careful analysis of the surgical specimen to detect the presence, nature and extent of any malignant contingent [9].

A mature teratoma carcinized into squamous cell carcinoma has a better prognosis than transformation into a sarcoma or melanoma [6].

According to a study by Peterson and al [11], cancerized mature teratomas metastasize in 64% of cases, with preferential involvement of the colon. Metastases may also occur in the peritoneum, rectum, sigmoid, para-aortic and pelvic lymph nodes or small intestine.

CONCLUSION:

Dermoid cyst is a benign germ cell tumor, often asymptomatic, suspected on pelvic ultrasound and MRI and confirmed by histology. Carcinogenesis is rare and often occurs in the menopausal period, hence the need for strict surveillance in the event of therapeutic abstention; recurrence is possible after cystectomy and may be associated with bilateral and multiple cysts.

REFERENCES:

1- R.J. Chen, K.Y. Chen, T.C. Chang, B.C. Sheu, S.N. Chow, S.C. Huang. Prognosis and treatment of squamous cell carcinoma from a mature cystic teratoma of the ovary. J Formos Med Assoc. 2008. Vol 107, no 11, pp: 857-865

2- Sinha R, Sethi S, Mahajan C, Bindra V. Multiple bilateral dermoid cysts: a case report. J Minim InvasiveGynecol. 2010;17(2):235-238.

3- Argoitia X, Duga I, Labeyrie E, Toledo L, Couteau C, Querleu D. Dermoid cyst degeneration. A case report of malignant transformation. Gynecol Obstet Fertil 2007;35:1005-8.

4- Pepe F, Lo Monaco S, Rapisarda F, Raciti G, Genovese C, Pepe P. An unusual case of multiple bilateral ovarian dermoid cysts. Case report. G di Chir. 2014;35(3-4):75-77.

5- Norris JH, O'Connor MD. "Pathology of malignant germ cell tumors of the ovary". "Gynaecologic oncology" Hong Kong: Longman Group (FE) Ltd. 1992; Second edition, In: Coppleson M, editor.

6- Chbania L, Znatia K , El Fatemia H, Harmoucha T , Bouchikhib C and al. Epithelial malignant transformation of a mature teratoma of the ovary: a case report. Rev Fran Lab 2008;407:99-102.

7- Desouki MM, Fadare O, Chamberlain B.K, Shakir N, KanbourShakir A. Malignancy associated with ovarian teratomas: frequency, histotypes, and diagnostic accuracy of intraoperative consultation. Ann Diagn Pathol. 2015;19:103-6.

8- Kikkawa F, Ishkawa H, Tamakoshik K, Nawa A, Suganuma N, Tomoda Y. Squamous cell carcinomas arising from mature cystic teratoma of the ovary : a clinicopathologic analysis. Obstet Gynecol 1997;89:1017-22.

9- Boufettal H, Ait Idder L, Serbouti S, Mahdaoui S, Noun M and al. Cancerized dermoid cyst of the ovary. Med press 2013;42:232-5.

10- Miyazaki K, Tokunagat T, Katabuchi H, Ohba T, Tashiro H, Okamura H. 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 1991;78:562-5.

11- Rim SY, Kim SM, Choi HS. Malignant transformation of ovarian mature cystic teratoma. Int J Gynecol Cancer 2006;16:140-4.