

From syncope episode to the diagnosis of ovarian dermoid cyst associated with a cystadenoma

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Abstract

Ovarian teratoma has various presentations. We present a 28-year female diagnosed with a tumour after a fainting episode. Medical history was non-contributory except for mild intermittent pelvic pain. Cardiologic and neurological evaluation found no cause of syncope. Abdominal ultrasound revealed a right ovarian tumour that was laparoscopically removed. The menses continued to be normal. The pathological exam showed an encapsulated tumour of 8 cm with hair and small bone parts (mature teratoma with a cystadenoma). Immunohistochemistry was positive for CK34beta E12 in stratified squamous epithelium of skin glands; positive CK7 in kidney tubular parts; positive actin in smooth muscle. The endocrine profile was normal and the patient remained asymptomatic. The challenging in the pathological report was to differentiate a cystic part of a solid tumour to a teratoma associated cystadenoma. No apparent cause of syncope was found so a possible tumour related local pain and inflammation mechanism might be involved.

Keywords: Ovarian teratoma, Dermoid cyst, Syncope, Cystadenoma.

Introduction

Teratoma comprises of a wide area of clinical manifestations. The name itself suggests bizarre behaviour. Nevertheless the ovarian teratomas may be completely asymptomatic up to locally anatomic complications, metastatic aggressive disease or non-metastatic implants as gliomatosis, or endocrine disturbances as thyrotoxicosis, neuroendocrine tumour

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behaviour, etc.¹⁻³ The signs and symptoms are the peak of an iceberg and the part under water varies considerably.⁴ Considering this clinical aspects a multidisciplinary approach is necessary.

We report the case of a young female presenting with syncope that needed further investigations. Finally a dermoid cyst associated with a cyst adenoma was diagnosed. No other cause of fainting was found, so the episode was probably caused by pain and the local inflammation, especially by the tumour related cyst. The fainting and the ovarian teratoma might also be incidental but the syncope was the only clinical clue to perform investigations including the pathological exam. Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Case Presentation

A 28-year old non-smoker female complained of intermittent mild bilateral pelvic pain since the last two years. She denied using any pain medication. Also no obvious trigger of the pain was observed by the patient. No investigation was performed earlier. The personal and

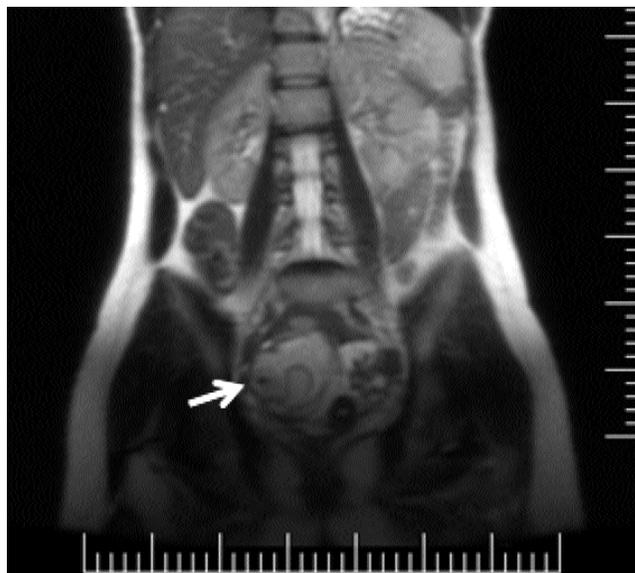


Figure-1A: Pre-operative magnetic resonance imaging aspects: right ovarian tumour.

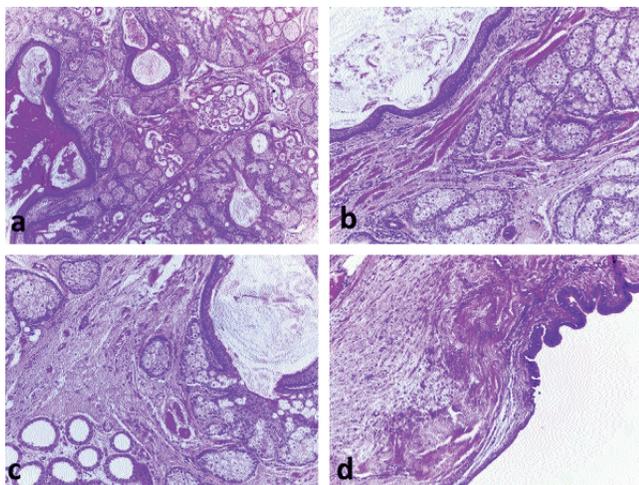


Figure-1B: a. Dermoid cyst. The skin and its appendages are usually the dominant tissue haematoxylin-eosin stain x4 b. Dermoid cyst. Most of the part of the wall of dermoid cyst consists of mature sebaceous glands, lined by large epithelial cells with abundant pale cytoplasm and a small round central nucleus haematoxylin-eosin stain x10 c. Dermoid cyst. The glands open into numerous ducts and discharge the secretion on to a surface covered with stratified squamous epithelium haematoxylin-eosin stain x10 d. Serouscystadenoma. The wall of cystic cavity consists of collagenous fibrous tissue and the cavity is lined with an apparently single layer of very tall columnar pleomorphic cells haematoxylin-eosin stain x10.

family history was non-contributory. She had regular monthly periods since the age of 12 years with normal puberty. She had no history of a pregnancy and abortion. She did not use any contraceptives or progestatives.

One year ago she suffered from a short episode of fainting without any relevant trigger or significantly associated clinical reason. She was examined at a medical centre where the arterial blood pressure and pulse was found to be within normal limits. She was referred to a specialist medical centre where the cardio-vascular and the neurological examination were normal including echocardiography, electrocardiogram, carotid artery ultrasound, electroencephalogram, and routine biochemistry tests. The abdominal ultrasound revealed a right ovarian tumour which was confirmed by a MRI scan (Figure-1A).

Laparoscopic surgery was performed with right annectomy and preservation of the uterus and the left ovary. No complication was registered during the procedure, neither after surgery. The menses continued to be regular after surgery also. The pathological exam revealed macroscopic aspects as encapsulated tumour of 8 by 6.5 by 5.5 cm; on section yellow necrosis with hair and small bone parts were detected. The microscopic exam showed a mature teratoma with triderme aspects (a dermoid cyst with elements from all three embryonic layers) (Figure-1B- a,b,c). Immunohistochemistry had a positive

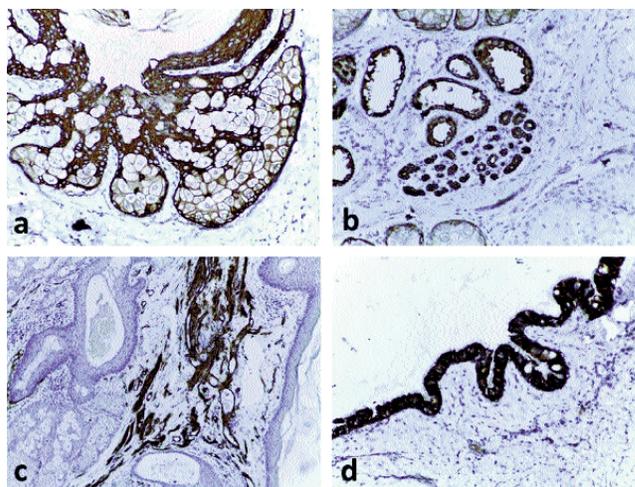


Figure-2: Immunohistochemistry aspects: a. 34betaE12 positive into the stratified squamous epithelium of the dermoid cyst x20 b. CK7 positive in glandular structures of the dermoid cyst x20 c. positive actin in smooth muscle fibres and vessels of the dermoid cyst x10 d. CK7 positive in epithelial cells lining the cavity of serous cystadenoma x20.

reaction for CK34beta E12 at the level of stratified squamous epithelium associated with glands of the skin. CK7 was positive in tubular part of kidney type, as well as at the level of sebaceous and sweat glands (Figure-2-a,b). Actin was positive in smooth muscle fibres and vessels of the dermoid cyst (Figure-2-c). Together with the dermoid cyst, a cystadenoma of the ovary was seen (Figures-1B-d, 2-d).

After surgery the patient was followed for 3 more months and no pelvic pain, neither episodes of fainting were registered. Later she was re-admitted to our hospital for a complete endocrine and gynaecological examination. On admission the clinical exam was normal. The patient had normal blood pressure and weight (Body Mass Index of 19 kg/m²). The plasma metanephrines and normetanephrines, the adrenal function as well as thyroid assays were normal. The ionogram pointed no anomaly. The control computed tomography found normal adrenals and a left ovary of 2 by 1.8 cm. No apparent cause of syncope was found so the initial (and the only episode of fainting) is considered to be related to the ovarian tumour, and possible local inflammation. She was followed for 4 more months and she remained completely asymptomatic. The patient will be periodically checked up.

Discussion

The onset symptom (the syncope) as seen in our case was previously described in literature as being related to a cyst in a case of an ependymal cyst in cerebello-pontine angle; in two different cases of hydatid cysts; in a case of dermoid cyst as in present case but located in sacral area, not an

ovarian cyst.⁵⁻⁷ Many cases are discovered based on a fainting episode because of blood pressure and neurological disturbances. Since no other obvious cause of fainting was found in patients' evaluation so it is presumed that the ovarian tumour and cyst was related to it. Moreover the time test was consistent with the presumption as after ovariectomy the patient felt well and no symptoms were registered. Despite the fact that syncope may be incidental the potential underlying mechanisms are: the local inflammation (more probably related to the cystadenoma than the dermoid cyst), and chronic pain (even mild) which may mediate small transitory changes in blood pressure or cardiac rhythm via cytokines release and oxidative stress anomalies. The pathological exam excludes a rupture of the cyst as seen in some cases causing syncope.⁷ Also an ovarian torsion may be associated with dramatic changes of blood pressure.⁸ In this case the syncope needed further investigations but the only anomaly that was found established the diagnosis of unilateral gonad teratoma. Although a possible pathogenic connection might be seen by inflammation mediators which may be incidental so the fainting episode may be an important cause for multiple examinations.

Around 40% of the population may have an episode of fainting during life.⁹ Nevertheless the syncope is a complex puzzle and clarifying its aetiology involves numerous medical domains.¹⁰ As seen in this case the patient had cardiologic, neurological, and endocrine evaluation apart from surgery and pathological examination. Neural mediated pre-syncope or syncope involves sympathetic neural activity correlated with different ovarian disturbances as seen in polycystic ovary syndrome (with or without obesity) or pregnancy correlated with high blood pressure or eclampsia.¹¹

The other particular aspect is the pathological challenge to differentiate the cystic ovarian teratoma to a mixed ovarian teratoma (including a cystic part) into the same ovary.^{12,13} Rare previous reports synchronously found these tumours, and the result is an argument for paying attention to multiple sections examination.¹⁴ It is difficult to establish whether it is a pathogenesis link or an accidental finding since series of cases have encountered these situations.¹⁵

Conclusion

Based on this case, a fainting episode lead to a number of

investigations that finally confirmed the diagnosis of an ovarian tumour. The chronic pain and local inflammation may potentially cause syncope via cytokines and oxidative stress mediators. This is difficult to establish in current daily practice, so an accidental finding in a previously undiagnosed dermoid cyst with a cystadenoma can be an indicator.

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