results suggest a role for p21 and cyclin D1 in the progression of vulvar squamous cell carcinoma.

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Meningioma-like endometrial stromal nodule with a stromal-derived foam cell component

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Sir: Endometrial stromal neoplasms can exhibit wide morphological variation.1,2 Among them, endometrial stromal nodules (ESN) are typically small, benign tumours,3 which grow in a nodular expansile fashion and are composed of a diffuse proliferation of endometrial stromal cells with a characteristic vascular pattern.

We present a case of a large ESN with an exclusive plexiform histology featuring a predominant whorled pattern unrelated to blood vessels and numerous foam cells with an endometrial stromal phenotype. Its appearance was remarkably similar to meningothelial meningioma.

The tumour was found at ultrasound examination of a 55-year-old multiparous patient who presented with abdominal pain. She was morbidly obese and her periods had not ceased. She underwent excision of the tumour followed by total abdominal hysterectomy and bilateral salpingo-oophorectomy.

Grossly, the 170-mm diameter intramyometrial tumour was soft and showed extensive yellow areas (Figure 1). It was well circumscribed and showed a pushing margin. Histology revealed a uniform pattern of whorled, target-like cellular nests unrelated to blood vessels (Figure 2a). Centrally, cells had bland oval nuclei, but in the outer aspects of the nests they appeared elongated and merged with the intervening fibroblastic stroma. Vessels were of sinusoidal type, but thick-walled arterioles were also present. Foam cells (Figure 2b) comprised over 50% of the tumour and were arranged in sheets within the intervening stroma, clustering around capillary-sized sinusoidal vessels. Neither hyaline plaques nor sex-cord elements were seen. Mitotic figures were rare.

Immunohistochemically, the whorled nests stained strongly positive for CD10 (Figure 2c), progesterone receptors (Figure 2d), aromatase (Figure 2e) and a-actin. The cytoplasm of two-thirds of the foam cells stained strongly positive for CD68. However, the remaining third was CD68–, but had membranous staining for aromatase (Figure 2f) and CD10 (Figure 2g), as well as strong nuclear staining for progesterone receptors (Figure 2h). Both tumour and foam cells were negative for a-inhibin, cytokeratins,
S100 protein, desmin, caldesmon, epithelial membrane antigen and CD117. CD34 stained only blood vessels, but these were never identified in the centre of the whorls. An ultrastructural study showed immature fusiform cells with microfilaments.

In the hysterectomy specimen, the endometrium was proliferative and the ovaries unremarkable. The patient is alive and well 3 years following surgery.

Although the present case of ESN shares some features with cases reported in a recent series, such as size, yellow colour and pushing margins, its histological appearance shows obvious differences. Whereas in the paper by Dionigi et al.3 all tumours exhibited areas, at least focally, of typical diffuse growth of endometrial stromal cells and a characteristic vascular pattern, these features were absent in the present case, despite extensive sampling.

The characteristic features of this tumour were the presence of syncytial whorled structures and numerous foam cells as integral parts of the tumour. It resembled morphologically meningothelial meningioma or neurothekeoma. In the context of endometrial stromal cells, it would seem that this concentric disposition recapitulates the endometrial stromal organization around spiral arterioles. The positive staining for CD104 and progesterone receptors and negative staining for smooth muscle markers support an endometrial stromal origin. We have not encountered this monophasic pattern in stromal tumours before, nor, to the best of our knowledge, has it been previously described. However, it has been reported that, occasionally, neoplastic cells show a 'subtle tendency to whorl around arterioles',3 but in the present case the whorl pattern was not occasional and was unrelated to vessels.

Aromatase was markedly positive in both foam and stromal cells. Aromatase positivity is a frequent finding in endometrial stromal tumours which are oestrogen dependent and indeed, their occurrence is often associated with hyperoestrogenism. Oestrogen can be produced by extravarian sources and the aromatase enzyme complex CYP19 is a key enzyme in extravarian oestrogen biosynthesis via conversion of circulating androgens. In the present case it is likely that both the whorled tumour cells and a large subpopulation of the foam cells utilized this pathway for oestrogen production. In the past, the presence of foam cells has been related to concurrent high levels of oestrogen in endometrial carcinomas. Subsequently, hormonally active foam cells of possible stromal origin have been described in endometrial stromal tumours, raising the possibility of a stromal cell origin for some foam cells. These findings are not in agreement with the suggestion that all foam cells in endometrial stromal tumours are histiocytes. The clustering of foam cells around capillary-type vessels allows them maximum access to circulating androgens, which they can convert to oestrogens via the aromatase enzyme complex. This local intratumoral oestrogen production would constitute an example of autocrine tumour growth stimulation and may explain why some endometrial stromal tumours reach a very large size, as happened in the present case. A clinical reflection of the putative hormonal activity of these cells could be the absence of menopause and the presence of a proliferative endometrium in this 55-year-old patient, although it should be borne in mind that the patient was morbidly obese, so that oestrogen may have also originated peripherally.

Tumours that show a similar architectural organization may be referred to as plexiform. Although mostly affecting the skin or soft tissues, some may be encountered in the female genital tract, especially the vulva. The term plexiform uterine tumour has been used in the past to describe a trabecular pattern of cells with features of epithelioid smooth muscle differentiation; these, however, are indistinguishable from sex cord-like tumours, a neoplasm closely related to endometrial stromal tumours. This unusual ESN pattern should be recognized and included in the differential diagnosis of plexiform tumours.

The prognosis of endometrial stromal tumours with this predominant microscopic pattern in the absence of both an infiltrative margin and nuclear atypia together with a very low mitotic count, suggests the usual benign behaviour of an ESN.

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**A dislike for endometrioid-like**

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Sir: In the August 2005 issue of *Histopathology*, Steinhauer et al. reported pulmonary tumours composed of complex branching tubules or papillae lined by clear cells with a vacuolated cytoplasm with a morphology resembling secretory endometrium. For these unusual lesions, they proposed the term ‘secretory endometrioid-like’ adenocarcinoma of the lung.

The term ‘endometrioid-like’ is a tautology, i.e. the saying of the same thing over again in different words. Basically, the words endometrioid and endometrioid-like express the same concept. The suffix -oid is derived from the greek noun eidos meaning form, shape or likeness and it forms adjectives and nouns meaning like or resembling in both shape and form. Thus, the association of adjectives formed by -oid with -like results only in superfluous repetition.

The term ‘endometrioid-like’ has been used in the past to describe an unusual variety of yolk sac tumour (YST), in which glandular formations are lined by a vacuolated epithelium considered to be similar to secretory endometrium. However, comparative morphology identifies these structures rather as the mimic of early endodermal differentiation (lung and gut) reproducing the characteristic polarized vacuolae of early fetal endodermal epithelia. It must be remembered that YSTs are considered to be embryonal tumours reproducing preferentially endodermal structures. Indeed, the histology of this subtype of YST partly resembles pulmonary adenocarcinoma of fetal lung type and has some features in common with the tumours described by Steinhauer et al. We believe that use of the term ‘endometrioid-like’ is not only misleading but may cause confusion amongst clinicians, as it is known that true endometrioid tumours of both endometrium and ovary can develop neoplastically into YSTs that are usually at an advanced stage with a very poor prognosis and a different response to chemotherapy than YST of usual type. Thus, we believe that the term glandular yolk sac tumour is preferable to ‘endometrioid-like’.

Another instance where the term endometrioid-like has been used in the past is in prostatic glandulopapillary tumours resembling endometrioid adenocarcinomas. These neoplasms were thought to originate from müllerian rests, but nowadays they are considered to be of prostatic ductal origin and thus the preferred World Health Organization term is ductal adenocarcinoma.

In order to simplify nomenclature and make it more user friendly for clinicians beleaguered by pathologists’ jargon, we consider that the term endometrioid (resembling endometrium) should be restricted to müllerian tumours with endometrioid differentiation of the genital tract and to similar ones arising in endometriosis elsewhere.

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