DOI: 10.7860/JCDR/2016/22152.9061

Case Report

Obstetrics and Gynaecology Section

# Uterine Tumour Resembling Ovarian Sex Cord Tumour- A Rare Entity

MUSTAFA GAZI UÇAR[1], TOLGAY TUYAN ILHAN[2], AYHAN GÜL[3], CEYHAN UGURLUOGLU[4], ÇETIN ÇELIK[5]

## ABSTRACT

Uterine Tumour Resembling Ovarian Sex-Cord Tumours (UTROSCTs) are an extremely rare type of uterine body tumours arising from the endometrial stroma. Epidemiology, aetiology, pathogenesis, management and natural history of UTROSCTs are still a question of debate, as there is little available data in the literature. Although rare, the possibility of UTROSCTs should be kept in mind, when a patient presents with abnormal bleeding and an enlarged uterus. UTROSCTs appear dirty white/cream-coloured, gelatinous, well-circumscribed mass with smooth surface on macroscopic examination. We present a rare case of endometrial stromal tumour with sex-cord-like differentiation which was successfully treated by hysterectomy with bilateral salpingo-oophorectomy. The clinical manifestations, pathologic characteristics, diagnosis and management of these tumours are reviewed here.

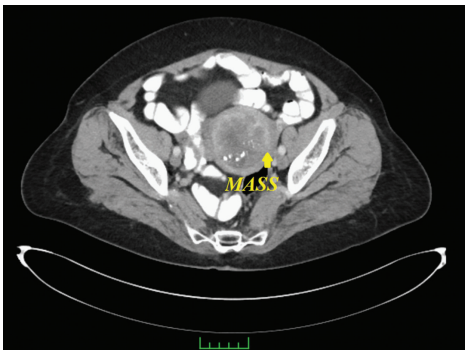
**Keywords:** Bilateral salpingo-oophorectomy, Endometrial stromal tumours with sex cord-like elements, Hysterectomy, Sex cord-like elements

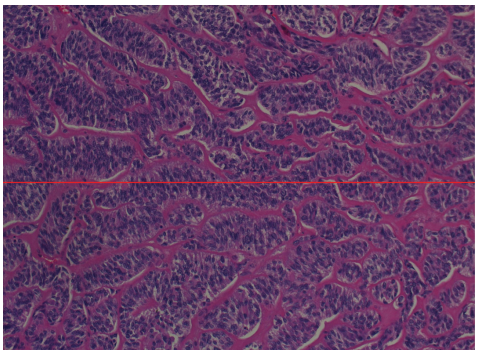
## CASE REPORT

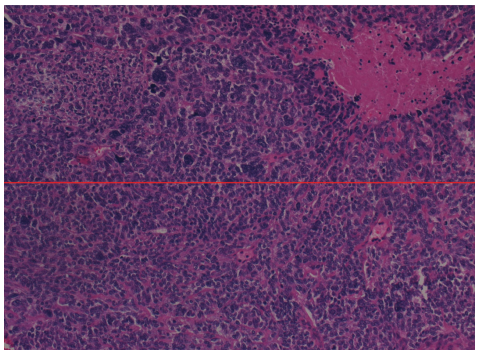
A 65-year-old G6, P5 post-menopausal woman was admitted to Selcuk University School of Medicine Hospital (Konya/Turkey) with abnormal uterine bleeding since two weeks. On examination her external genitalia and cervix were found to be normal. On gynaecologic examination there was a palpable pelvic mass. Ultrasound showed thickened, irregular uterine lining of about 9mm and a heterogeneous, well-circumscribed intramural mass measuring 8cm in the largest transverse diameter. The mass occupied almost the entire anterior wall of the uterus. The diagnostic findings were similar to cystic degeneration of fibroids [Table/Fig-1]. Dilation and Curettage (D&C) was performed on the same day. Afterwards, endometrial sampling revealed focal adenocarcinoma but the exact histologic subtype and grade could not be specified because of the limited pathologic material and fragmentation of tissue. Immunohistochemical stains showed tumoural cells diffuse positivity for vimentin and CK7, focal weakly positive for ER and negative for the expression of CD56 and PR. She was scheduled for surgery. The patient then underwent laparoscopic surgical staging, including hysterectomy, bilateral salpingo-oopherectomy, and bilateral pelvic and para-aortic lymphadenectomy. Specimen was cut open for gross examination, the polypoid mass was dirty white/cream-coloured, gelatinous and 8cm in size with smooth surface. The operation was uneventful and the patient was discharged from hospital 48 hours after the procedure.

On microscopic examination, tumour exhibited different levels of maturity: from cords, trabeculae, nests, and rosette-like structures to well-defined rings and pseudotubular structures [Table/Fig-2,3]. There were anastomosing trabecule and cords of cells with retiform architecture. The overlying endometrium was atrophic without any findings of malignancy. Focal tumour cell necrosis and increased mitotic index up to 8 mitoses per 10 high-power fields was present. The presence of an ovarian sex cord tumour component was confirmed by immunohistochemistry. The immunohistochemical staining pattern of tumour was: negative for desmin, alpha inhibin, calretinin, chromogranin, HMB45, MelanA, sinaptofizin, S100, CK20 and CK5/6. Vimentin, CD99 and p53 were highly expressed in tumour, while CD56, CD10, SMA, PanCK, EMA, CK7 and CK19 showed focal expression. Stromal cells were found to be ER positive and PAS-positive. Diastase-resistant inclusions were seen.

Based on pathological findings and immunohistochemical examination a diagnosis of UTROSCT was made. The tumour was completely confined to the myometrium and distance of tumour from closest margin to uterine serosa was 2 cm. There were no lymph node metastases. The patient received no other postoperative therapy and she had been uneventful over 12-month follow-up.





**[Table/Fig-1]:** Computed tomography showed a well-circumscribed mass measuring 8 cm in the largest transverse diameter with calcification and occupying the anterior portion of uterus. **[Table/Fig-2]:** Haematoxylin and eosin staining (magnification x200). The neoplastic cells showed an epithelioid appearance with indistinct eosinophilic cytoplasm, atypia, small with round to ovoid nuclei, and grow in tight nests, sheets, and cords. **[Table/Fig-3]:** Haematoxylin and eosin staining (magnification x200). An appearance of dysplastic tumoural cells with focal areas of hyalinization of neoplasm and sex cord–like pattern with pseudotubules and glomeruloid structures were noted.

## DISCUSSION

Uterine tumours with sex cord-like differentiation are an extremely rare type of uterine body tumours and to date, the number of UTROSCTs described in the literature has not reached 100 cases [1,2]. This relatively newly defined clinical entity with unknown aetiology was described for the first time in 1975 by Clement and Scully [3]. They classified these neoplasms into two types depending on their histopathological and clinical features: Type I (endometrial stromal tumours with sex cord-like elements, ESTSCLEs), where the differentiation in the direction of the sex cord elements occurs focally; and Type II (uterine tumour resembling ovarian sex-cord tumours, UTROSCTs), showing predominant sex cord–like differentiation [3,4]. Type I tumours show a predominant endometrial stromal pattern with less than 50% focal ovarian sex-cord pattern [4]. Both of them though seems similar and most likely arise from uterine pluripotent mesenchymal cells, yet they differ from each other significantly in terms of clinical behaviour and molecular genetic features [5]. UTROSCTs belong to a group of low-grade malignant neoplasms and are included in the current 2014 World Health Organization classification of uterine tumours [2]. ESTSCLEs have traditionally been recognized to have more aggressive potential than. UTROSCTs and they show a propensity to recur or metastasize. The outcome of Type I disease is contingent upon type, grade and stage of the stromal component of the neoplasm [4,5]. Type II tumours commonly follow a benign course, and their prognosis depends mostly on the percentage of the sex cord elements [6]. Although its characteristics are not fully understood, hypothesized originating cells included endometrial stromal cells, adenomyosis, stromal myosis, endometriosis, or multipotential cells within the myometrium [3].

Origin, risk factors, pathogenesis and management strategies of UTROSCTs are still a question of debate, as there is little available data in the literature.

The lack of a specific clinical presentation and pathognomonic symptoms or findings on imaging studies makes it difficult to identify. Because UTROSCTs exhibit a co-expression of epithelial, muscle, and sex cord markers as well as steroid receptors, diagnosis is primarily based upon histopathologic features on haematoxylin/eosin staining with confirmation by immunohistochemical staining [7]. The tumour may show a wide variety of architectural patterns and may express epithelial, stromal, sex cord and smooth muscle markers.

Positive staining for at least two sex-cord markers is supportive, including calretinin and at least one other marker [4,5]. As some of these markers stain only focally, none of them is specific enough when used alone. Another immunohistochemical markers often found to be positive are; sex cord markers such as calretinin, CD99, inhibin, melanoma-associated antigen recognized by T cells (MART-1) and Wilms' Tumour protein 1(WT1); smooth muscle markers, such as desmin, smooth muscle actin, histone and deacetylase 8; miscellaneous markers, such as oestrogen receptor, progesterone receptor, CD10, CD117 and S100; and epithelial markers, such as Epithelial Membrane Antigen (EMA) and pancytokeratin [5]. However, the immunohistochemical and cytogenetic markers described above have only been identified within the last decade and this is the reason why the vast majority of literature refers to UTROSCT generally without subcategorization.

They have a well-circumscribed or slightly irregular margin, an average diameter of 6 cm, yellow or tan colour, with a variably soft to firm consistency, and homogeneous nature, and they morphologically resemble ovarian sex cord tumours [1]. Haemorrhage and necrosis are uncommon in UTROSCTs [8].

They are classically considered as disease of perimenopausal and postmenopausal women [1]. Mean age at the time of diagnosis of UTROSCT was 52 and age younger than 40 accounted for less than one third of cases (30.2%) [4]. Postmenopausal uterine bleeding and irregular menstruation are the two most common symptoms, followed by pelvic pain [4,8].

UTROSCTs most likely represent a distinct neoplasm unrelated to ESTSCLEs and endometrial stromal tumours. A genetic study by Staats et al., demonstrated that apart from clinical outcome, ESTSCLE like endometrial stromal tumours show JAZF1-JJAZ1 translocation which are absent in UTROSCT [9].

Over the past few decades, surgical modalities have shifted from radical methods to more conservative approaches. Fertility-preserving approaches should be considered in selected patients since some authors report good outcomes after conservative management [1-3]. However, due to the rarity of this disease, management guidelines and follow-up strategies are non-existent. To date, hysterectomy with or without bilateral salpingo-oophorectomy has been used as the preferred method of surgical treatment [10], although a hysteroscopic resection [11] and mass resection alone [4] or radiotherapy without hysterectomy [12] were successfully performed. In the absence of risk factors identified by Blake et al., such as ESTSCLE subcategory, distant metastases, or lymphovascular space invasion, either definitive surgical management or mass resection with regular surveillance could be selected [4]. There are no recommendations for chemotherapy or radiotherapy [1]. There is only 1 case in literature that underwent definitive radiotherapy without hysterectomy due to morbid obesity [12]. One case in which postoperative radiotherapy was given after hysterectomy [13]. Another treatment option that has not yet been explored for UTROSCT is hormonal treatment, such as a progestin agent [4].

Although UTROSCTs are benign tumours with occasional occurrence of local recurrence, owing to the uncertain malignant potential and the scarcity of available data, close follow-up is recommended in patients treated conservatively [1,9,10]. Metastases of these tumours have also been reported [14]. In our case no regional or distant metastasis was observed. No patient has been reported to have died of this tumour [2].

Based on the microscopic and immunohistochemical findings, the differential diagnosis included epithelioid leiomyoma, epithelioid leiomyosarcoma, adenocarcinoma, low-grade mixed müllerian tumour (adenosarcoma), and metastatic ovarian sex cord tumour [15].

In this study, preoperative endometrial scraping cytology was performed and the initial diagnosis suggested adenocarcinoma. Awareness of its typical clinical manifestations remains the mainstay for intervention. Familiarity (knowledge of clinical symptoms as well as morphological and immunohistochemical pattern) with this tumour by gynaecologists and pathologists is essential to avoid misdiagnosis. In addition, these tumours usually behave in a benign fashion and women with these tumours can be successfully treated with hysterectomy alone.

## CONCLUSION

Although rare, the possibility of UTROSCTs should be kept in mind, when patients present with abnormal bleeding and have an enlarged uterus or a palpable uterine mass with/without pelvic pain on physical examination; and on macroscopic examination, dirty white/cream-coloured, gelatinous well-circumscribed mass with smooth surface, in women at perimenopausal and postmenopausal period. In conclusion, there is an urgent need for multicenter research trials to improve the evidence for a consensus on optimal treatment of this disease, for which management is not yet standardized.

**Informed Consent:** Written informed consent was obtained from the patient for publication of this report.

## REFERENCES


[1] Liu CY, Shen Y, Zhao JG, Qu PP. Clinical experience of uterine tumours resembling ovarian sex cord tumours: a clinicopathological analysis of 6 cases. *Int J Clin Exp Pathol*. 2015;8:4158-64.

[2] Bakula-Zalewska E, Danska-Bidzinska A, Kowalewska M, Piascik A, Nasierowska-Guttmejer A, Bidzinski M. Uterine tumours resembling ovarian sex cord tumours, a clinicopathologic study of six cases. *Ann Diagn Pathol.* 2014;18:329-32.

[3] Clement PB, Scully RE. Uterine tumours resembling ovarian sex-cord tumours. A clinicopathologic analysis of fourteen cases. *Am J Clin Pathol.* 1976;66:512–25.

[4] Blake EA, Sheridan TB, Wang KL, Takiuchi T, Kodama M, Sawada K, et al. Clinical characteristics and outcomes of uterine tumours resembling ovarian sex-cord tumours. *Eur J Obstet Gynecol Reprod Biol*. 2014;181:163-70.

[5] Pradhan D, Mohanty SK. Uterine tumours resembling ovarian sex cord tumours. *Arch Pathol Lab Med*. 2013;137:1832-36.

[6] Oztekin O, Soylu F, Yigit S, Sarica E. Uterine tumour resembling ovarian sex cord tumours in a patient using tamoxifen: report of a case and review of literature. *Int J Gynecol Cancer*. 2006;16:1694-97.

[7] Hurrell DP, McCluggage WG. Uterine tumour resembling ovarian sex cord tumour is an immunohistochemically polyphenotypic neoplasm which exhibits coexpression of epithelial, myoid and sex cord markers. *J Clin Pathol*. 2007;60:1148-54.

[8] Giordano G, Lombardi M, Brigati F, Mancini C, Silini EM. Clinicopathologic features of two new cases of uterine tumours resembling ovarian sex cord tumours. *Int J Gynecol Pathol*. 2010;29:459-67.

[9] Staats PN, Garcia JJ, Dias-Santagata DC, Kuhlmann G, Stubbs H, McCluggage WG, et al. Uterine tumours resembling ovarian sex cord tumours (UTROSCT) lack the JAZF1-JJAZ1 translocation frequently seen in endometrial stromal tumours. *Am J Surg Pathol*. 2009;33:1206-12.

[10] Anastasakis E, Magos AL, Mould T, Economides DL. Uterine tumour resembling ovarian sex cord tumours treated by hysteroscopy. *Int J Gynaecol Obstet*. 2008;101:194-95.

[11] Garuti G, Gonfiantini C, Mirra M, Galli C, Luerti M. Uterine tumour resembling ovarian sex cord tumours treated by resectoscopic surgery. *J Minim Invasive Gynecol*. 2009;16:236–40.

[12] Nogales FF, Stolnicu S, Harilal KR, Mooney E, Garcia-Galvis OF. Retiform uterine tumours resembling ovarian sex cord tumours. A comparative immunohistochemical study with retiform structures of the female genital tract. *Histopathology*. 2009;54:471–77.

[13] Kabbani W, Deavers MT, Malpica A, et al. Uterine tumour resembling ovarian sex-cord tumour: report of a case mimicking cervical adenocarcinoma. *Int J Gynecol Pathol*. 2003;22:297–302.

[14] Umeda S, Tateno M, Miyagi E, Sakurai K, Tanaka R, Tateishi Y, et al. Uterine tumours resembling ovarian sex cord tumours (UTROSCT) with metastasis: clinicopathological study of two cases. *Int J Clin Exp Pathol*. 2014;7:1051-59.

[15] Sutak J, Lazic D, Cullimore JE. Uterine tumour resembling an ovarian sex cord tumour. *J Clin Pathol.* 2005;58:888-90.



**PARTICULARS OF CONTRIBUTORS:**

1. Assistant Professor, Department of Obstetrics and Gynaecology, Selçuk University Medicine Faculty, Selçuklu, Konya, Turkey.
2. Assistant Professor, Department of Obstetrics and Gynaecology, Selçuk University Medicine Faculty, Selçuklu, Konya, Turkey.
3. Assistant Professor, Department of Obstetrics and Gynaecology, Selçuk University Medicine Faculty, Selçuklu, Konya, Turkey.
4. Assistant Professor, Faculty, Department of Pathology, Selçuk University Medicine Faculty, Selçuklu, Konya, Turkey.
5. Professor, Department of Obstetrics and Gynaecology, Selçuk University Medicine Faculty, Selçuklu, Konya, Turkey.

**NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:**

Dr. Mustafa Gazi Uçar,
Selçuk Üniversitesi Alaeddin Keykubad Kampüsü, Selçuk Üniversitesi Tıp Fakültesi,
Selçuklu/Konya, Posta Kodu: 42075, Turkey.
E-mail: mustafa_gazi_ucar@hotmail.com



**FINANCIAL OR OTHER COMPETING INTERESTS:** None.

Date of Submission: **Jun 17, 2016**
Date of Peer Review: **Jun 28, 2016**
Date of Acceptance: **Aug 01, 2016**
Date of Publishing: **Dec 01, 2016**