

## Case Report: Leiomyosarcomas of Both Ovarian Veins

**P Jeannot MD, C Poon and N Michot MD\***

Service de chirurgie digestive, oncologique et endocrinienne, transplantation hépatique, CHRU Trousseau, France

\***Corresponding author:** N Michot, Service de chirurgie digestive, oncologique et endocrinienne, transplantation hépatique, CHRU Trousseau, Tours, France, Tel: 33658524461

### Abstract

**Background:** Leiomyosarcoma is a rare tumor of smooth muscle origin. The ovarian vein origin is very rare. Here we describe a presentation of leiomyosarcomas of both ovarian veins.

**Case report:** a 70 years-old patient had a diagnostic of retroperitoneal tumors due to abdominal pain. A biopsy was achieved for the right tumor and concludes to leiomyosarcoma. CT scan showed two tumors depending on both ovarian veins. A surgery was done with the resection of both tumors. Resection was complete (R0). After two years of follow-up, there is no recurrence.

**Conclusions:** this is the first description of leiomyosarcomas of both ovarian veins. The resection was successful.

**Keywords:** Leiomyosarcoma; Ovarian vein; Bilateral tumors

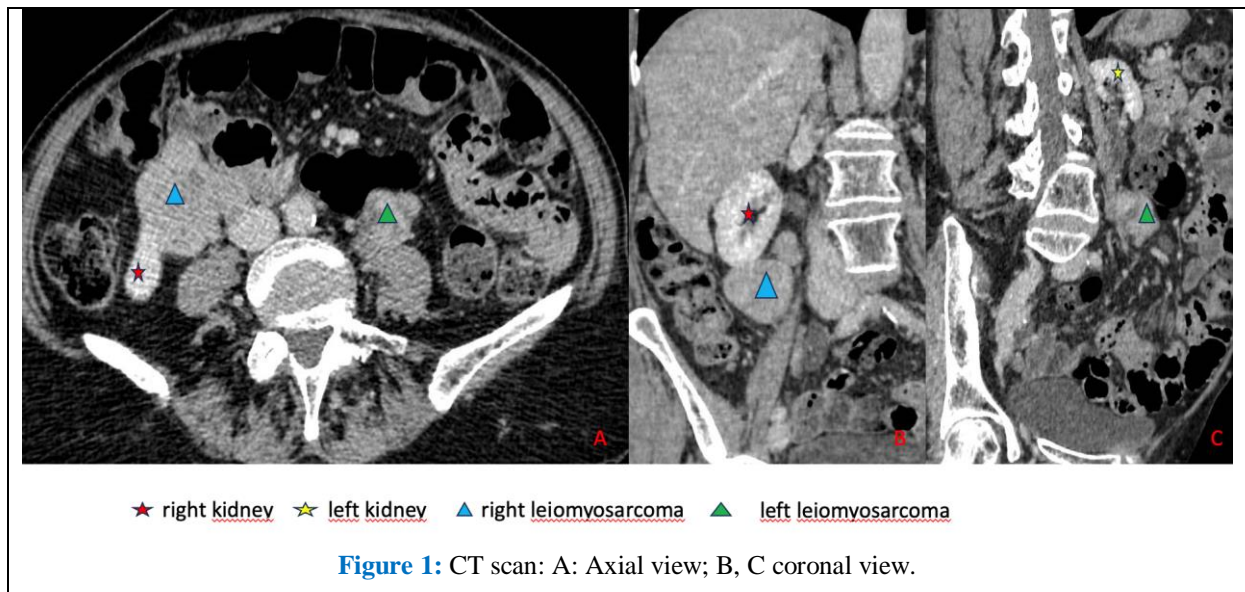
**Abbreviations:** CT scan: Computed Tomography ; FNCLCC: Fédération Nationale des Centres de Lutte Contre le Cancer

### Introduction

Soft tissue sarcomas represent less than 1% of malignancies. Among these tumors, leiomyosarcoma represent 6%. Leiomyosarcoma is a rare malignant mesenchymal tumor of smooth muscle origin. Vascular leiomyosarcoma constitute 2% of all leiomyosarcoma and affects veins five times more than arteries [1]. The inferior vena cava, renal vein, and central adrenal vein are most involved. The ovarian vein origin is uncommon with only few cases describe in the literature. There Is 17 cases describe but none with bilateral tumor. Here we describe the first leiomyosarcomas of both ovarian veins [1-18].

## Case Presentation

A 70-year-old woman with a left renal atrophy due to a left Ureteral Reimplantation surgery. She had a CT scan for abdominal pain 3 years ago, showing a left mass measuring 17 x 11 mm. This mass was neglected. Recently, a right abdominal mass was auto palpated. This was explored by a new CT scan showing a right retroperitoneal mass bilobed measuring 48 x 32 mm and 20 x 15 mm. The mass on the other side increased in size (25 x 22 mm) (Figure 1).



In accordance with international recommendations [19], a biopsy found a spindle cell proliferation compatible with a grade I (FNCLCC) leiomyosarcoma. There was no evidence of regional extension, no metastases. We realized a surgery by enucleation of the right tumor and extended nephrectomy with the tumor on the left side due to the atrophy.

Final histology showed for the right tumor a leiomyosarcoma of the right ovarian vein grade 2 (FNLCC: differentiation: 2, mitosis: 1, necrosis: 1) measuring 7 x 8 x 5.5 cm (Figure 2).



**Figure 2:** Right tumor.

The samples found a proliferation in long bundles of spindle cells with abundant and eosinophilic cytoplasm which corresponds to an organization of smooth muscle tissue. The muscular origin is confirmed by the positive immunohistochemical markers for actin, desmin and caldesmon. Malignant character is confirmed by the presence of anisokaryosis cells, high mitotic numbers, and the presence of necrosis. Mitotic activity is estimated at 9 mitoses per  $2 \text{ mm}^3$ , we visualize the presence of several foci of tumor necrosis whose surface area is estimated at approximately 10%. The resection was R0.

For the left side: there was a leiomyosarcoma of the left ovarian vein measuring 3 x 3 x 3 cm and a metastasis in the left kidney measuring 4 mm. The resection was R0 (**Figure 3**).



**Figure 3:** Left tumor.

Due to the rarity of this case, a rereading was carried out within the framework of the NETSARC+ network (French sarcoma group). The patient had no complication after the surgery. 2 years of follow up showed no recurrence so far.

## Conclusions

We described the first case of bilateral tumor of the ovarian vein. According to the literature, the leiomyosarcoma is a malignant tumor requiring a surgery with a complete resection R0 and a long-term follow-up. The resection is possible for a bilateral tumor of the ovarian vein. We achieved to preserve one kidney by enucleation of the tumor. According to the recommendations, the compartmental surgery is not recommended for a leiomyosarcoma.

## References

1. [Dzsinich C, Gloviczki P, van Heerden JA, Nagorney DM, Pairolero PC, Johnson CM, et al. Primary venous leiomyosarcoma: A rare but lethal disease. J Vasc Surg. 1992;15\(4\):595-603.](#)
2. [Khaladkar SM, Singh T, Mohanan K, Kuber R, Dhirawani S. A case of leiomyosarcoma of the ovarian vein with obstructive uropathy and hepatic metastasis. SA J Radiol. 2022;26\(1\):2501.](#)
3. [Yokoyama Y, Goda T, Sato K, Suzuki M, Kanda T, et al. Leiomyosarcoma arising from the ovarian vein as a gynecologic malignancy: Two case reports and a review of the literature. J Obstet Gynaecol Res. 2022;48\(8\):2224-30.](#)
4. [Nakayama R, Takizawa I, Maruyama R, Kasahara T, Hara N, et al. Leiomyosarcoma of the ovarian vein with the renal invasion: a case report. Nihon Hinyokika Gakkai Zasshi. 2017;108\(4\):210-14.](#)
5. [Inatsu H, Murata T, Tokunaga M, Nyomura S, Takahashi N, et al. Leiomyosarcoma arising from ovarian vein with right hydronephrosis: a case report. Nihon Hinyokika Gakkai Zasshi. 2015;106\(3\):211-5.](#)
6. [Tsuchiya H, Kawahara T, Kawai K, Chiara I, Tanaka K, et al. A case of leiomyosarcoma arising from the ovarian vein preoperatively diagnosed with radiological imaging. Hinyokika Kyo. 2017;63\(10\):407-12.](#)
7. [Ianneli A, Karimjee B, Fabiani P, Liolos J, Avallone S, et al. Leiomyosarcoma of the ovarian vein: report of a case. Int Surg. 2003;88\(1\):6-8.](#)
8. [Chiarugi M, Pressi E, Mancini R, Fattori S, Galatioto C, Seccia M. Leiomyosarcoma of the right ovarian vein. Am J Surg. 2009;197\(4\):e36-7.](#)
9. [Cho HJ, Kim HK, Suh JH, Lee GJ, Shim JC, Kim YH, et al. Leiomyosarcoma of the Ovarian Vein: a Case Report with Radiological Findings. Korean J Radiol. 2008;9: S14.](#)
10. [Hajji F, Azami MA, Adlouni S, Benazzouz A, Ghoundale O. Primary Leiomyosarcoma of the Ovarian Vein Causing Obstructive Uropathy: A Case Report. Cureus. 2022;14\(8\):e28510.](#)
11. [Hirano T, Okumura H, Maeda S, Shimada M, Imakiire A, Makisumi K, et al. Vascular leiomyosarcoma originating from the right ovarian vein: a case report and literature review. Surg Case Rep. 2019;5\(1\):120.](#)
12. [Kawai K, Horiguchi H, Sekido N, Akaza H, Koiso K. Leiomyosarcoma of the Ovarian Vein: An Unusual Cause of Severe Abdominal and Flank Pain. Int J Urol. 1996;3\(3\):234-6.](#)
13. [Kim SH, Kwon HJ, Cho JH, Lee SW, Rha SH, Choi J, et al. Atypical radiological features of a leiomyosarcoma that arose from the ovarian vein and mimicked a vascular tumour. Br J Radiol. 2010;83\(989\):e95-7.](#)

14. [López-Ruiz ME, Yébenes L, Berjón A, Hardisson D. Primary Leiomyosarcoma of the Ovarian Vein: Case Report and Literature Review. Int J Surg Pathol. 2017;25\(4\):339–43.](#)
15. [Matsuzono T, Chan CYH, Chan MYM. Gonadal vein leiomyosarcoma: A case report with radiological findings. Intractable Rare Dis Res. 2015;4\(3\):152–4.](#)
16. [Rajpurohit V, Mehta P, Kothari N, Nathani S. Leiomyosarcoma of the Right Ovarian Vein: a Case Report with Multimodality Management and Long-Term Follow-Up. Indian J Surg Oncol. 2019;10\(3\):523–6.](#)
17. [Saigusa S, Ohi M, Inoue Y, Kusunoki M. Preoperative diagnosis by three-dimensional angiography of a leiomyosarcoma arising from the left ovarian vein. BMJ Case Rep. 2013;2013:bcr2013008823.](#)
18. [Suzuki K, Taniguchi K, Ito S, Serizawa A, Yamamoto M. Leiomyosarcoma arising from the right ovarian vein. J Surg Case Rep. 2019;2019\(11\):rjz302.](#)
19. [Gronchi A, Miah AB, Dei Tos AP, Abecassis N, Bajpai J, Bauer S, et al. Soft tissue and visceral sarcomas: ESMO–EURACAN–GENTURIS Clinical Practice Guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2021;32\(11\):1348–65.](#)

### **Citation of this Article**

Jeannot P, Poon C and Michot N. Case Report: Leiomyosarcomas of Both Ovarian Veins. *Mega J Case Rep.* 2024;7(4):2001-2005.

### **Copyright**

©2024 Michot N. This is an open-access article distributed under the terms of the [Creative Commons Attribution License \(CC BY\)](#). The use, distribution or reproduction in other forums is permitted, provided the original author(s) or licensor are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.