



# Retroperitoneal Multilobular Fibromyxoid Tumor: Surgical and Pharmacological Approach – A Case Report

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## Abstract

The Multilobular Fibromyxoid Tumor (MLFTM), or Evans tumor, is a tumor commonly described in mesenchymal tissues of the lower limbs. The retroperitoneal form of the disease is rare and poorly described in the literature. Few cases have been reported. The disease exhibits low-grade histological features, which are mainly expansive and can reach large dimensions, thereby compressing adjacent structures, however, some cases of infiltration into adjacent organs and distant metastases have been reported.

Due to the lack of information in literature, there were many difficulties encountered in the management of the case. This case report is aimed both at providing more information on this type of tumor and helping health care professionals in taking the course of conduct that is the most appropriate to the patient, avoiding exposure to unnecessary risks.

## Introduction

The Multilobular Fibromyxoid Tumor (MLFTM), or Evans tumor, is a tumor commonly described in mesenchymal tissues of the lower limbs. The retroperitoneal form of the disease is rare and poorly described in the literature. Only 17 cases have been reported, of which 9 were females and 8 males, aged between 30 and 50 [1]. The disease exhibits low-grade histological features, which are mainly expansive and can reach large dimensions, thereby compressing adjacent structures [2]. However, some cases of infiltration into adjacent organs and distant metastases have been reported.

The treatment for these tumors is still in its experimental phase and limited to investigative protocols. The drugs of choice for treating retroperitoneal sarcomas are doxorubicin and ifosfamide [3]. The most serious risks associated to them, though, are cardiotoxicity and myelosuppression.

Cardiotoxicity due to chemotherapeutic agents is well described, especially in relation to anthracyclines (class which doxorubicin belongs to) [4]. Frequently, this type of treatment can also result in thromboembolic, ischemic, pericardial, arrhythmic, and hypertensive events. The anthracycline-related cardiotoxic effects are directly related to the cumulative dose, i.e., the total amount of the drug delivered in the treatment. Ifosfamide, a chemotherapeutic agent of the alkylating agent class drugs, is another drug with a potential cardiotoxic effect. Yet, these effects are less well described than are those of anthracyclines. The pathophysiological mechanisms are not yet fully understood, but include myocardial fibrosis, which can cause irreversible damage and seriously debilitate the patient's cardiac function [5].

This case report is aimed both at providing more information on this type of tumor and helping health care professionals in taking the course of conduct that is the most appropriate to the patient, avoiding exposure to unnecessary risks.

## Case Presentation

A 36-year-old white female patient was admitted with abdominal pain, which she had been experiencing for the previous 3 months. She reported periumbilical abdominal pain, in colic-like jolts, without irradiation, associated with an increase in abdominal volume, mostly to the left side, which was alleviated upon flexing the trunk and using analgesics. She also reported further worsening of the symptoms following food intake and upon deep inspiration.

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**Figure 1:** CT scan from the patient's first hospitalization revealing 3 abdominal tumors.



**Figure 2:** Post-Chemotherapy CT scans showing three expansive masses, with slight reduction in their size.

Upon physical examination, she presented with a protrusion in the left upper and left lower abdomen, increased bowel sounds, painful to percussion in the left hypochondrium 4 cm below the left costal margin due to a mass measuring about 20 cm. The patient felt pain upon superficial and deep palpation in the left hypochondrium and epigastrium, but no signs of peritonitis. No other alteration was observed in the physical examination except for weight loss. In relation to her past history, the patient had only undergone one myomectomy due to multiple myomas 3 years before the onset of symptoms.

She was admitted to the hospital in order to have her symptoms assessed. She underwent laboratory tests, including tumor markers, all of which gave normal results (CA-125, CA-19-9). A Computed Tomography (CT) scan revealed three bulky solid hypovascularized masses having areas of probable liquefaction that ranged in size from the largest to the smallest, respectively, in the hypochondrium and left flank (21 cm on the cranio-caudal axis), mesenteric root (13.5 cm on the largest axis), and anterior to the rectum (8 cm on the transverse axis). The masses presented with expansive features and were located in close proximity to the liver (segment II), spleen, pancreas, intestinal loops, mediastinal vessels, displacing the stomach, without major infiltrative features. They did not have well-defined cleavage planes (Figure 1). An echocardiogram was also performed and accounted for an ejection fraction of 67%.

Initially, an exploratory laparotomy was indicated, in which resection was not possible and no biopsy was performed to avoid compromising the integrity of the tumor, due to a risk of rupturing its cystic component, which might result in spreading the tumor inside the cavity.

A cytological evaluation of the peritoneal lavage was undertaken and yielded negative results. The patient progressed uneventfully and was then discharged.

She was referred for a CT-guided biopsy, which revealed a

fusocellular neoplasm that tested as CKIT-, CD34-, S100-, Desmin-, DOG1- and had an associated low mitotic index (low Ki67). The biopsy sample was diagnosed as a fibromyxoid tumor. The patient was referred to the Department of Clinical Oncology in an attempt to achieve cytoreduction for a future surgical reassessment.

A regimen comprising 7 cycles of Ifosfamide and Doxorubicin was chosen. The patient progressed with cystitis in October and was treated with Uromitexan (Mesna®). A new CT scan of the abdomen was performed and revealed the same dimensions of the tumor, showing better delimited cleavage planes and, hence, the possibility of resection (Figure 2).

A new laparotomy with a xipho-pubic incision was undertaken to resect the masses. All of them were excised, without damage to adjacent structures or capsule rupture. The weight and measurements of the masses were 147 g (8 cm × 8 cm × 4 cm); 1,354 g (22 cm × 18 cm × 6 cm) and 5,369 g (36 cm × 21 cm × 11 cm) (Figure 3).

The pathological analysis revealed a low-grade tumor with a zero mitotic index, consisting of mesenchymal tissue with patches of partially hyalinized fibrosis and patches of myxoid tissue. There were areas of ischemic necrosis without histological evidence of malignancy, therefore confirming the diagnosis of fibromyxoid tumor.

On the first postoperative day, the patient was dehydrated and had a mild anemia (Hb 10.3 on PO1), which gradually improved with volume replacement. There were, however, signs of heart failure (non-fixed splitting of the first heart sound in the mitral focus and persistent tachycardia ranging between 100 bpm to 120 bpm). An echocardiogram was then requested, which showed an ejection fraction of 48%, with mild pericardial effusion, slight mitral and tricuspid valve insufficiency, and decreased left ventricular systolic function.

Her diagnosis of heart failure was probably secondary to



**Figure 3:** Tumors resected.

chemotherapy, by the anthracycline (doxorubicin). We proposed that metoprolol (25 mg/day) was administered to the patient in order to attain the target heart rate of 85 bpm and, subsequently, an Angiotensin Converting Enzyme Inhibitor (ACEI) to reduce cardiac overload.

After 8 days, the patient was discharged and is being followed up on an outpatient basis. Nowadays she is in the 2<sup>nd</sup> year of follow-up using the above-cited medications and shows no signs of recurrence and does not present signs of heart failure.

## Discussion

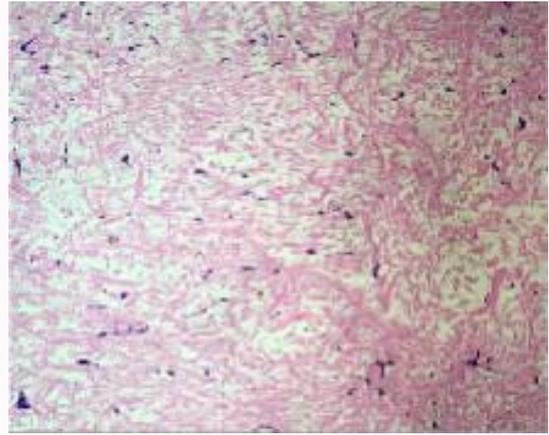
MFLTM, or retroperitoneal Evans tumor, basically has expansive features and is a low-grade sarcoma. The symptoms reported in the literature are abdominal pain in the tumor region, compressive symptoms such as constipation, sensation of fullness and abdominal distension, depending on the location. There are no representative differences between men and women, but it is more prevalent in young adults, as in the case. These are very nonspecific signs, leading to a delayed diagnosis.

In a study with 17 cases of retroperitoneal MLFTM, the main associated symptoms are abdominal pain (41%) and mass effects (29%), symptoms presented by the patient. The reported recurrence rate is around 23%, and only 17% of the patients followed up died within 5 years. This suggests that MLFTM has a low recurrence rate and a good prognosis [1].

The literature indicates that in 90% of cases, there is a translocation t(7;16)(q36;p11), involving the FUS-CREB3L2 gene, a cell fusion gene, hyper-expressed in the condition [6]. No genetic testing was made in this case.

Imaging tests usually show hypovascular, hypodense, expansive, rarely infiltrative tumors, such as those presented by the patient, and are the methods indicated for tracing recurrence and controlling the condition. There was observed no increase in any known serum tumor marker, neither in those used in screening nor in those used in monitoring disease progression.

The definitive diagnosis is obtained when the anatomic-pathological features are similar to those seen in the present case, i.e. low-grade tumor, partly comprised of myxoid tissue and partly comprised of dense connective tissue. The arrangement of such tissues may be in bands or show a diffuse distribution. In general, in immunohistochemistry assays, it tests positive for vimentin and CD34 [7]. These markers tested negative in the patient.



**Figure 4:** Low grade tumor with partially dense, partially loose connective tissue.

The main differential diagnosis for the fibromyxoid tumor is the desmoid tumor, whose anatomic-pathological features show dense connective tissue. It is related to previous abdominal surgeries and traumas and grows from cicatricial fibroses. In addition, it is also associated with Familial Polypoid Adenomatosis and Gardner's Syndrome [8] (Figure 4).

The literature references published from 2013 to 2018 that we searched recommend a radical surgical resection to ensure a lower risk of recurrence of fibromyxoid tumors, regardless of their location [9]. In order for us to reach this conclusion, we have identified cases in which soft tissues of lower limbs was affected. Still, there is no evidence contrary to adopting the same approach for these abdominal tumors.

Chemotherapy, in the case reported, was indicated to decrease tumor size and reduce surgery-related risks. Furthermore, the uncertain diagnosis established by means of biopsy-guided tomography in combination with the dimensions of the masses hampered an accurate indication for a type of treatment.

This case shows the difficulty still encountered in managing less common tumors, for which chemotherapy regimens have not yet been well defined. There was, at first, a fear of resecting the tumors because of their large size, a risk of rupturing the capsule and consequently spreading tissue in the cavity.

A standard chemotherapy regimen for expansive tumors and sarcomas was used in an attempt to reduce the size of the masses. Nevertheless, there was only a slight reduction in their size, but maybe helped in regressing adhesions with adjacent structures and a new surgical approach was indicated, very similar to the first one but now posing even greater risks to the patient due to the side effects of the neo-adjuvant chemotherapy.

Chemotherapy, however, can lead to risks, such as cardiotoxicity, which affected the patient. Myocardial injury caused by anthracyclines leads to fibrosis, which is commonly irreversible. The first signs of this lesion were evidenced by the persistent postoperative tachycardia. The physiological response to surgical trauma probably was the trigger for an increased heart rate.

The prognosis is not very well established, with evidence of recurrence in just fewer than 30% of the cases reported in the literature [1]. For this to occur there is a need for a good surgery,

without rupture of the capsule and with a complete resection of the tumor. If there is a recurrence of the tumor, the treatment is again a surgical one and should be administered as early as possible to reduce the intraoperative risk.

The greatest risk to the patient, according to this case report, is of chemotherapy-related cardiac injury. The use of carvedilol and ACEI is recommended to reduce left ventricular overload [10].

## Conclusion

The diagnosis of TFMML is sometimes difficult. Chemotherapy did not reduce tumor size but appears to have favored its resectability. The surgery was effective in treating the case described.

## References

1. Geramizadeh B, Zare Z, Dehghanian AR, Bolandparv S, Marzban M. Huge mesenteric low-grade fibromyxoid sarcoma: A case report and review of the literature. *Rare Tumors*. 2018;10:2036361318777031.
2. Van Roggen JF, McMenamin ME, Fletcher CD. Cellular myxoma of soft tissue: A clinicopathological study of 38 cases confirming indolent clinical behaviour. *Histopathology*. 2001;39(3):287-97.
3. Gortzak E, Azzarelli A, Buesa J, Bramwell VH, van Coevorden F, van Geel AN, et al; E.O.R.T.C. Soft Tissue Bone Sarcoma Group and the National Cancer Institute of Canada Clinical Trials Group/Canadian Sarcoma Group. A randomised phase II study on neo-adjuvant chemotherapy for high-risk adult soft-tissue sarcoma. *Eur J Cancer*. 2001;37(9):1096-103.
4. Kalil Filho R, Hajjar LA, Bacal F, Hoff PM, Diz MP, Galas FRBG, et al. I Diretriz Brasileira de Cardio-Oncologia da Sociedade Brasileira de Cardiologia. *Arq Bras Cardiol*. 2011;96(supl 1):1-52.
5. Adão R, de Keulenaer G, Leite-Moreira A, Brás-Silva C. Cardiotoxicidade associada à terapêutica oncológica: mecanismos fisiopatológicos e estratégias de prevenção. *Rev Port Cardiol*. 2013;32(5):395-409.
6. Matsuyama A, Hisaoka M, Shimajiri S, Hayashi T, Imamura T, Ishida T, et al. Molecular detection of FUS-CREB3L2 fusion transcripts in low-grade fibromyxoid sarcoma using formalin-fixed, paraffin-embedded tissue specimens. *Am J Surg Pathol*. 2006;30(9):1077-84.
7. Reki B, Deshmukh M, Jambhekar NA. Low-grade Fibromyxoid sarcoma: a clinicopathologic study of 18 cases, including histopathologic relationship with sclerosing epithelioid fibrosarcoma in a subset of cases. *Ann Diagn Pathol*. 2011;15(5):303-11.
8. Niewenhuis MH, Casparie M, Mathus-Vliegen LM, Dekkers OM, Hogendoorn PC, Vasen HF. A nation-wide study comparing sporadic and familial adenomatous polyposis-related desmoid-type fibromatoses. *Int J Cancer*. 2011;129(1):256-61.
9. Folpe AL, Lane KL, Paull G, Weiss SW. Low-grade fibromyxoid sarcoma and hyalinizing spindle cell tumor with giant rosettes: a clinicopathologic study of 73 cases supporting their identity and assessing the impact of high-grade areas. *Am J Surg Pathol*. 2000;24(10):1353-60.
10. Khan AA, Ashraf A, Singh R, Rahim A, Rostom W, Hussain, M, et al. Incidence, time of occurrence and response to heart failure therapy in patients with anthracycline cardiotoxicity. *Intern Med J*. 2017;47(1):104-9.