

## Case Report

# Desperation Surgery as a Successful Approach in Chemorefractory Testicular Germ Cell Cancer: The Relevance of a Multidisciplinary Approach

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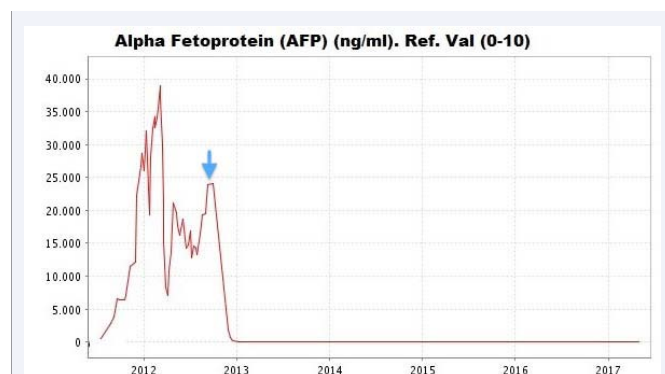
Germ cell tumors (GCTs) represent about 95% of all testicular malignancies. Since the introduction of cisplatin-based chemotherapy and the integration of systemic treatments with surgery and radiotherapy, GCTs have become the paradigm of solid curable neoplasms. In order to achieve excellent outcomes is critical the management in institutions with extensive experience and a multidisciplinary approach integrating all the available treatment tools. Surgery is key in the treatment of the primary tumor and in the resection of residual masses after systemic therapy. However, persistently elevated serum tumor markers after chemotherapy have been traditionally considered a contraindication to surgery prompting the use of systemic treatment. Yet, a selected group of patients with elevated markers might benefit from a post-chemotherapy resection with a curative intent named “desperation surgery”. The following case illustrates the role of desperation surgery in rendering disease free a patient with a long history of advanced non-seminomatous GCT that had been considered chemo-refractory and with no further treatment options.

**CASE REPORT**

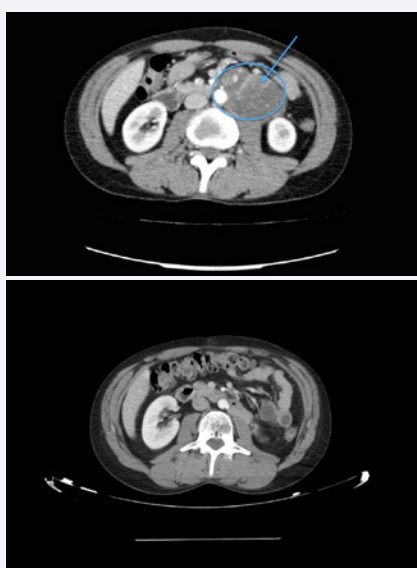
A 33 year-old patient with unremarkable past medical history was diagnosed in February 2004 with a stage III S1 non-seminomatous germ cell tumor (NSGCT) with retroperitoneal and lung metastases. Following orchidectomy the patient received 4 cycles of standard chemotherapy [BEP regime] achieving a complete marker response with a residual retroperitoneal mass of 3.7 centimeters. A resection of this mass was discarded at the institution where he was being treated and only a regular clinical and radiological follow-up was established. Five years later the patient presented with an obstructive uropathy caused by a retroperitoneal mass of 15 cms. Along with elevation of AFP at 620 ng/ml. Treatment with paclitaxel, ifosfamide and cisplatin was then initiated achieving a radiological partial response and decrease, but not complete normalization, of tumor markers. Surgery was disregarded in that context and the patient transferred his care to our center. Upon posterior AFP elevations the patient received new chemotherapy regimens including: gemcitabine-oxaliplatin, adriamycin, etoposide, methotrexate with bleomycin, topotecan and local radiotherapy.

None of these treatments was able to achieve a durable marker response. In October 2012 a new imaging assessment revealed stabilization of retroperitoneal mass (Figure 1) but remarkable progression of AFP that was in the range of 25.000 ng/ml. Given this behavior the patient was discussed in a multidisciplinary board at our institution and considered not amenable for further chemotherapy. A “desperation surgery” of the retroperitoneal mass was then contemplated. In November/2012 a complete resection of a retroperitoneal mass of 7 cms in longest diameter was performed. Pathology revealed metastasis of malignant germ cell tumor whose only viable component was yolk sac tumor along with extensive necrosis. Shortly after surgery the AFP dropped according to half-life achieving normal values in 7 weeks (Figure 2) and CT scan showed no evidence of residual disease elsewhere. The patient continues follow-up in our clinic with no signs of relapse by imaging and marker evaluation 42 months after surgery.

A successful outcome in the management of advanced GCTs patients can only be achieved through a multidisciplinary approach integrating all the available treatment tools. Surgery



**Figure 1** AFP during the course of the disease The blue arrow indicates AFP pre-surgery.



**Figure 2** Abdominal CT scan follow-up

**Figure 2.1:** CT Abdomen before surgery [Oct 2012].

The CT scan reveals a large retroperitoneal tumor, [blue arrow and circle] consisting on a solid mass of 7.9 cm close to the aorta and that includes the inferior mesenteric artery

CT Abdomen after surgery [April 2016]

**Figure 2.2:** CT abdomen 40 months after surgery. The last CT scan shows no evidence of residual disease.

has a critical role in both in the management of the primary tumor and in the resection of residual masses after primary therapy. However, elevated serum tumor markers after cisplatin-based chemotherapy have normally been considered a contraindication to surgery prompting the use of systemic therapy in this setting under the assumption of persistent active germ cell elements. Nevertheless, is critical to keep in mind that a selected group of patients with elevated markers might benefit from a post-chemotherapy resection with a curative intent. Foster and Donohue in 1998 [1], named this approach as “desperation surgery”. Since then a number of publications have identified factors such as tumor location (retroperitoneal Vs others), smaller size, elevated AFP as the only abnormal marker and complete resection as good predictors of long survival; also these works have shown that surgery, even in the presence of elevated markers, might be curative for some patients [2-5].

## CONCLUSION

Advanced GCT patients who present with progression to conventional systemic treatments and a persistent residual mass amenable for resection should be considered for desperation surgery regardless the value of serum tumor markers.

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## Cite this article

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