Bulletin of the *Transilvania* University of Braşov
Series VI: Medical Sciences • Vol. 11 (60) No. 1 - 2018

STAGE IV NON-SEMINOMA MIXED GERM CELL TESTICULAR TUMOUR IN A 15-YEAR OLD BOY – CASE REPORT

L. MUNTEAN[1] A. PAPA[1*] A. MIRONESCU[2]

Abstract: *The authors report the case of a 15-year-old boy that was admitted to the hospital for abdominal pain and weight loss – approximately 10kg, clinical examination revealed a large abdominal tumour that occupied the whole left side of the abdomen and another large left testicular tumour that affirmatively started to grow one year ago. CT scan and tumour markers were obtained prior to the radical inguinal orchiectomy. Given the advanced stage of disease the patient started chemotherapy. The patient and family interrupted all medical treatment and follow-up after 4 months, presenting 10 months later in a terminal stage, with an enormous abdominal tumour that caused an inferior vena cava syndrome. Even if testicular cancer has a good survival rate, the delay in diagnosis and lack of compliance to treatment can give it a poor prognosis.*

Key words: *Testicular tumour, Non-seminoma, Metastasis, Delayed diagnosis*

1. Introduction

Background: testicular cancer is the second most common neoplasia in teenagers aged 15 to 19 after leukaemia and the most common cancer in men between 20 and 40 years of age [11].

Histologically testicular germ cell tumours account for 95% of neoplasia of the testis, and are classified as seminomas and non-seminomas [5], [8].

Non-seminoma germ cell tumours usually present at an early age and are more aggressive [3].

According to the Children's Oncology Group staging system for testicular tumours, stage IV is described as distant metastases stage, including the liver. A 6-year survival, even for stage IV patients tends to be good after surgery and chemotherapy reaching up to 88%. Early detection of the malignancy (stage I) results in 100% 6-year survival rate [1].

2. Case Presentation

We present the case of a 15-year-old male patient admitted to the Paediatric Surgery Department for left upper quadrant and lumbar pain that started 4 months ago,

[1] Clinical Emergency Children's Hospital of Braşov.
[2] Faculty of Medicine, *Transilvania* University of Braşov.
*Correspondent author: papaadrian21@gmail.com

weight loss – approximately 10kg.

The clinical examination revealed a large palpable mass that occupied the whole left side of the abdomen, and another large left testicular mass, affirmatively the patient noticed the growth of the left testicle since one year ago. (Figure 1)

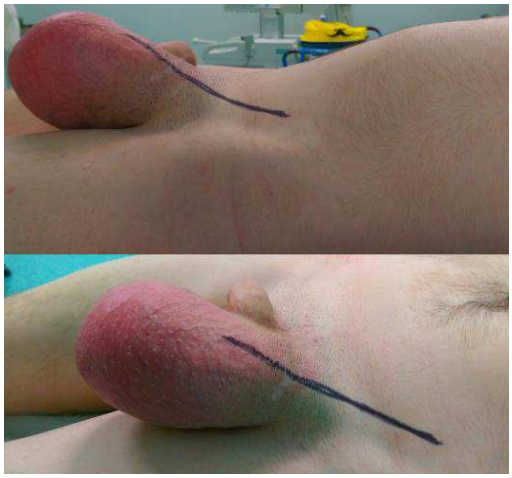

Fig. 1. *Image of preoperative clinical presentation – testicular and abdominal tumour*

Tumour markers were carried out showing an alpha-fetoprotein of 3800ng/ml (n 0.6 – 6.7), a beta-HCG of 1027,42 mUI/ml (n <2.6) and LDH of 614 U/L (n 240-480).

A CT scan of the thorax-abdomen and pelvis was ordered, that showed a right pulmonary nodule that was suggestive of a pulmonary metastases. At the level of the left side of the abdomen a large abdominal tumour was shown that measured 20/15cm that was displacing the stomach and small bowel cranially, the aorta and inferior vena cava to the right. The left kidney was pushed cranially showing signs of grade II Hydronephrosis from compression on the left ureter, and signs of arterial hypo-perfusion of the kidney were seen. At the level of the testicle a tumour with necrotic areas was described (Figure 2).

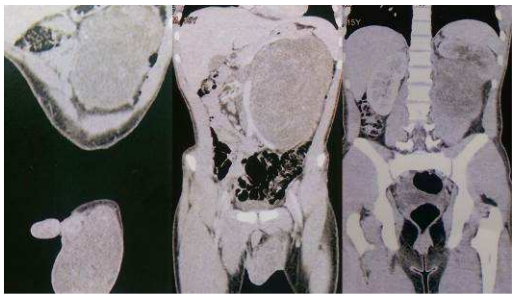

Fig. 2. *Image of preoperative CT scan of the abdomen and pelvis – testicular and abdominal tumour*

According to the International Germ Cell Cancer Collaborative Group (IGGCCG), that takes into account the degree of elevation of alpha-fetoprotein, human chorionic gonadotropin and lactic dehydrogenase; and the presence of non-pulmonary visceral metastases like liver, bone or brain; our patient had an Intermediate prognosis with a prognosis of 5-year survival rate reaching up to 79% in 26% of patients [2].

A radical inguinal orchiectomy, with high ligation of the spermatic cord at the level of the internal inguinal ring, was performed removing the tumour that measured 16/9/7cm (Figure 3).

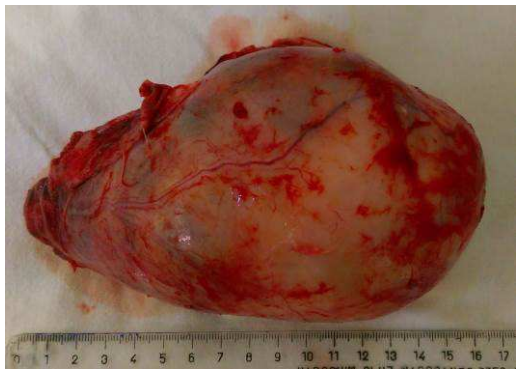

Fig. 2. *Image of macroscopic aspect of the testicular tumour*

The histological exam revealed a non-seminoma mixed germ cell tumour. The patient was referred to the Paediatric Oncology Clinic of the "Prof. Trestioreanu" institute of Bucharest where he received chemotherapy treatment with Bleomycin, Etoposide and Cisplatin. After the first three cycles of chemotherapy a second CT scan was performed that showed size and numeric progression of the pulmonary metastasis reaching 1.4 /1.2cm in the largest nodule. The abdominal tumour also showed size progression – 23/16cm. Bone scintigraphy – no signs of bone metastasis.

Tumour markers showed a decrease in values: beta-HCG 4,7mUi/ml, alpha-fetoprotein 76,6ng/ml.

A contrast MRI of the abdomen and pelvis was performed, after the fourth cycle of chemotherapy with added Ifosfamide and Paclitaxel, the MRI showed again progression in the size of the abdominal tumour 24/16cm. After this investigation the patient and the family interrupted the treatment, the medical and surgical follow-up.

10 months later the patient is admitted to the oncologic unit of our hospital, for abdominal pain, a huge abdominal mass, oedema of the inferior limbs and shortness of breath.

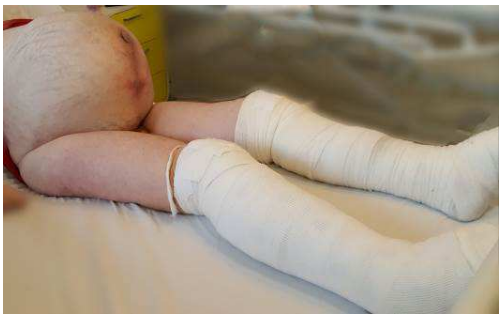

Fig. 2. *Clinical presentation 10 months after interruption of medical care*

The clinical exam revealed marked oedema of the lower limbs, scrotum and penis (Inferior vena cava syndrome), tachycardia, shortness of breath with SpO_2 87%, and an enormous abdominal tumour (Figure 4).

Echography described multiple transonic areas (necrosis) at the level of the tumour. Blood tests showed a tumour lysis syndrome with high levels of urea, creatinine, uric acid, phosphate, potassium and hypocalcaemia.

The ethics committee explained to the parents the prognosis and that the patient is in a terminal stage of cancer and he is referred for palliative care.

The patient died one week later, 16 months after the initial diagnosis.

3. Discussions

Testicular tumours associated with lumbar pain at the initial presentation should raise suspicion of an advanced stage [7].

More than 65% of patients with non-seminoma germ cell tumours present at diagnosis a regional or distant metastasis, 20% of them having the presenting complaint caused by the metastasis, as in our patient [1].

A study conducted in the '90s by Moul et al., demonstrated a significantly lower survival rate for patients with non-seminomas that had a symptomatic interval greater than 4 months, before the introduction of Cispatin in 1979, chemotherapy attenuated the prognosis of delayed diagnosis and the affected survival of these patients was less pronounced [4].

A lower education background and teenagers or men embarrassed about the changes in the genital area seem to result in a longer delay in diagnosis, as described

by multiple authors. Thus, it is important to raise awareness about testicular cancer in men, teenagers or their parents, with a better health education that could lead to a decrease in diagnostic delay and result in a better outcome of treatment [6], [9], [10]

Testicular cancer has a good cure rate, after the introduction of chemotherapy even if diagnosed in late stages, but in the case of our patient with a very late presentation (with at least 1 year from the first clinical symptoms), the secondary retroperitoneal tumour was already large, and unresponsive to chemotherapy.

4. Conclusions

It is crucial to raise awareness in teenagers, and parents of paediatric patients, about the importance of self-examination in diagnosing testicular tumours at an incipient stage - that referred to a specialist could lead to a 100% cure rate. Every testicular mass should be evaluated by a paediatric surgeon/ urologist to rule out malignancy.

It is important for the parents to be counselled and to understand the need of chemotherapy, even if it has adverse effects, like in our case where they interrupted the treatment and follow-up after 4 months.

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