

Introduction

- Bladder cancer is rare in young patients, even more in females. Muscle-invasive bladder cancer frequently metastasizes. In the non-metastatic setting, the standard of care is neoadjuvant systemic treatment followed by surgery or trimodal treatment. In metastatic patients, the treatment is often limited to chemotherapy, immunotherapy, and more recently ADCs.
- **Here we report a case of a young female with a cardiac metastasis from a muscle-invasive bladder cancer.**

Methods

- A 36-year-old female patient was referred for a **second opinion regarding a MIBC**. She had a history of heavy smoking for about 15 years, obesity, and deep venous thrombosis (attributed to oral contraception).
- During a routine gynecologist consultation, an ultrasound showed a formation in the bladder. She then underwent a TURBT with an apparent complete resection, the pathological report showed a **high-grade MIBC (at least pT2) with a squamous differentiation** (GATA3+, p53+, αSMA+).
- **The initial staging showed a large nodal involvement in iliac, cava and aortic territories and surprisingly, a large right cardiac thrombus.** Our patient presented a mild dyspnea.

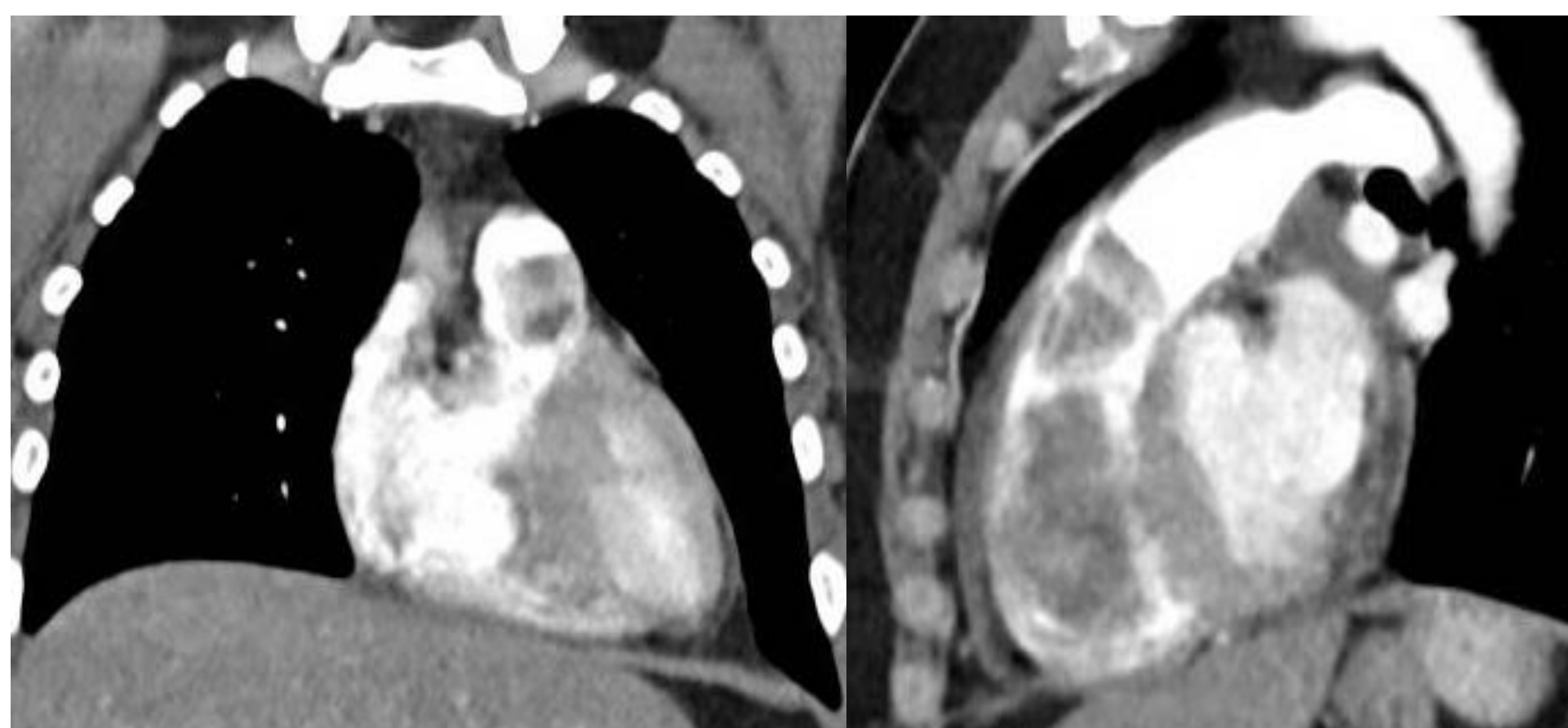


Figure 1 : CT Scanner showing a cardiac mass

- The cardiologic assessment based on a **cardiac MRI showed a malignant mass with invasion of free wall, septum and pericardium**. A PET scan showed massive retroperitoneal nodal involvement, which could suggest lymphoma.
- An **open-heart surgery was performed to remove the mass**. The fleshy mass involved the whole right ventricle and the tricuspid valve, which was resected. No monobloc resection was possible due to erosion, but maximal resection was performed.
- **Pathological analysis confirmed a keratinizing squamous cell carcinoma (with necrosis and moderately differentiated).**
- After tumor board discussion, it was staged as **pT2 N3 M1** with a squamous cell component, but not as a squamous cell carcinoma. A **TP53 pathogenic mutation** was later detected.
- A treatment with Antibody drug **Enfortumab-Vedotin combined & Pembrolizumab** was started as early as possible. The alternative, as chemotherapy, wouldn't be supported by our patient.
- Unfortunately, our patient rapidly progressed to rapid general degradation. She then progressed to a caval syndrome and paraneoplastic syndrome, which led to a limitation of care. Our patient was placed on palliative care and died 25 days after antibody drug administration

Results

- **Bladder cancer is the 7th most common cancer in Europe and is the 5th leading cause of cancer-related deaths (1).** Bladder cancer usually affects males above 55 years old, with smoking being the most important risk factor (2).
- MIBC comprises around 25% of newly diagnosed bladder cancers, however metastatic bladder cancers are the most advanced stage and account for only 5% of cases.
- In MIBC, the 5-year overall survival is 35-70%, and it is even worse in metastatic settings (5%).
- Bladder cancer most commonly spreads to the lymph nodes (especially in the pelvis and abdomen), bones and lungs (2).

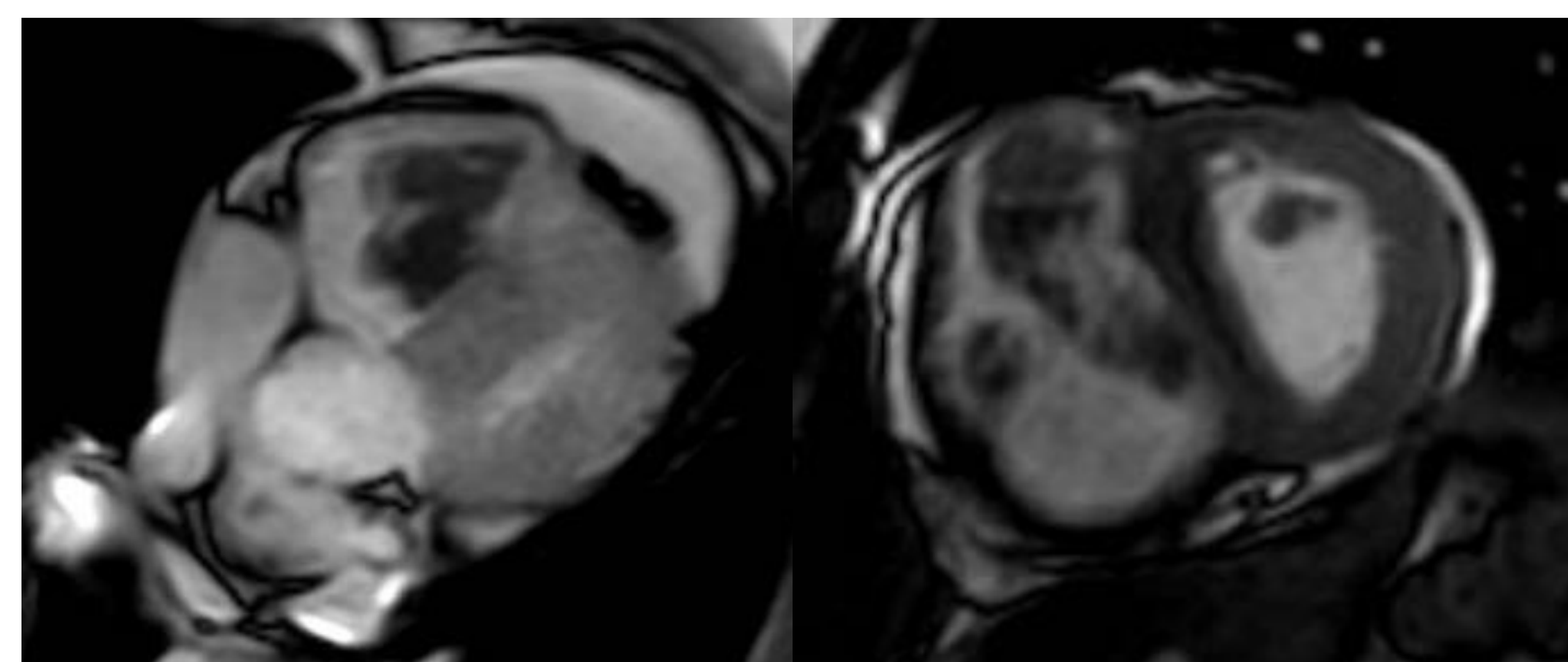


Figure 2 : MRI showing invasion of free wall, septum & pericardium

- **Cardiac metastasis from a bladder cancer is very rare and drives an inferior prognosis** with a survival often measured in weeks.
- However, most of the case reports showed an evolution to cardiac metastasis after local or systemic treatments for bladder cancer and not as a de novo feature (3).
- As a progressive disease, the average time between diagnosis and cardiac metastasis was 4 years, and the survival time after diagnosis of metastatic setting was 60 days. The most common site of cardiac metastasis is the myocardium (3).
- In the context of de novo cardiac metastasis, no case reports were found in the literature.

Conclusions

Bladder cancer is the 7th cancer in Europe and only 5% presents as de-novo metastatic setting. Cardiac metastasis are an extremely rare condition and drive a very poor prognosis, with survival in weeks. In our case, Antibody drugs, as new standard of care, do not show any improvement in this setting.

Bibliography

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