

## Sartorius muscle metastases from urothelial cell carcinoma.

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**ABSTRACT:** Urothelial carcinoma of the bladder represents the majority of malignant bladder tumors. Metastases to skeletal muscle from carcinoma of the bladder are extremely rare and are tend to be found in people with advanced-stage carcinoma. In this article we present a man with an unusual metastasis to the left sartorius muscle from an urothelial cell carcinoma, who was submitted in surgery and then in concomitant chemotherapy and external radiation therapy as palliative therapy.

*Key words:* Urothelial cell carcinoma, sartorius muscle

### INTRODUCTION

Bladder cancer is a common urological cancer with significant morbidity and mortality. Approximately 90% of all bladder cancers are urothelial (transitional cell) carcinomas and only 5% are squamous cell carcinomas.(1) Although the disease is locally controlled, many patients will ultimately develop distant metastases. Metastases to skeletal muscle from carcinoma of the bladder are extremely rare and are tend to be found in people with advanced-stage neoplasm.(2) Only a few reported cases have been published worldwide.(3) In this article we present an unusual metastasis to the left sartorius muscle from an urothelial cell carcinoma.

### CASE PRESENTATION

A 56 year old man was referred to our hospital with reported severe muscular pain in the left thigh which presented the last month. He had a history of bladder carcinoma and for that reason he undergone a radical cystectomy with bilateral pelvic lymph node dissection one year ago. According to the histological report it was a high grade (Grade III) urothelial carcinoma, stage T3N0Mx with negative surgical margins. In the context of his regular follow-up, the patient underwent a pelvic CT, where there was found a bulge of the left sartorius muscle and impurity of its subcutaneous fat. The patient underwent an MRI which revealed a well circumscribed mass with dimensions 3x1, 7cm, with heterogeneous high magnetic signal in T1 sequences. The patient underwent surgery where the left sartorius muscle with dimensions 9x4x3.9cm was removed. Histology showed that this is a metastasis from the already known urothelial cancer with neoplastic cells which were strongly positive in the CK7 and negative in CK20, while the cellular proliferation index ki67 was about 40%. The surgical margins were positive and for that

reason the patient was submitted in concomitant chemotherapy and radiation therapy. He was submitted in 6 cycles of intravenous chemotherapy consisted of Gemcitabine and Cisplatin and was referred to the Radiotherapy Department for IFRT (Involved Field Radiation Therapy) with a total dose volume of 20 Gy in 4 sessions with a daily dose volume of 5 Gy. The therapy was performed in a linear accelerator with 6MeV energy and 0.5cm margin from the bed of the tumor. The patient was followed up 1 month later with clinical examination and he reported a reduction of the pain

### DISCUSSION

Urothelial (transitional cell) carcinoma of the bladder represents the majority of malignant bladder tumors. The most frequent sites of metastases are to lymph nodes, lung and bones. Haematogenous metastasis to skeletal muscles is uncommon and approximately 100 cases have been reported worldwide. Skeletal muscles receive a great portion of the total cardiac output as it represents the half of the total body mass. However, hematogenous metastatic disease to the skeletal muscle is extremely rare and has a worse prognosis than a metastasis to any other organ.(4) There are various factors that can describe the resistance of skeletal muscle to metastatic disease, such as muscle motion, muscle pH which creates a hostile environment for the tumor growth, as well as the muscle's ability to remove tumor- produced lactic acid that induces tumor neovascularity.(2, 5) Despite all these defensive factors, there have been reported metastases to skeletal muscles from malignancies of the pancreas, colon and lung.(2, 6) Metastatic disease to skeletal muscles tends to be found in advanced- stage neoplasms and the most common sites of metastatic involvement are the largest muscles, such as psoas and gluteus.

In our case, the patient presented with muscular pain, which is compatible with some studies showing that most lesions are painful.

The majorities of patients with metastasis in skeletal muscles develop widespread disease and die in a mean duration of 8 months. Effective palliation can be achieved with chemotherapy and local radiotherapy, according to the few existing data. These small series also indicate that skeletal muscle metastasis from transitional cell carcinoma has a poor prognosis.(4)

In conclusion localized swellings in muscles, in patients with bladder carcinoma, that present with or without pain should be followed by CT scan so as to exclude the possibility of a distant metastasis. Median time to diagnosis of distant metastasis is 18 months. Clinicians should be aware of atypical presentation of skeletal muscle metastasis, so as to perform as soon as possible a lesion biopsy and start the shortest possible the proposed palliative treatment.

## Μετάσταση ουροθηλιακού καρκινώματος στον ραπτικό μυ

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**ΠΕΡΙΛΗΨΗ:** Το ουροθηλιακό καρκίνωμα της ουροδόχου κύστης αντιπροσωπεύει την πλειοψηφία των κακοηθών όγκων της ουροδόχου κύστης. Οι μεταστάσεις σε σκελετικούς μύες από καρκίνωμα της ουροδόχου κύστης είναι εξαιρετικά σπάνιες και τείνουν να εμφανίζονται σε άτομα με προχωρημένη νόσο. Σε αυτό το άρθρο παρουσιάζουμε μία περίπτωση ασυνήθιστης μετάστασης στον αριστερό ραπτικό μυ από ένα ουροθηλιακό καρκίνωμα, η οποία αντιμετωπίστηκε με χειρουργική επέμβαση και στη συνέχεια με ταυτόχρονη χημειοθεραπεία και ακτινοθεραπεία ως παρηγορητική θεραπεία.

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