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Case Report

Transitional Cell Carcinoma of the Bladder in a 12-Year-Old Gelding

Sara Busechian*, Rodolfo Gialletti, Chiara Brachelente, Jacopo Corsalini, Sara Nannarone, Fabrizio Rueca

Department of Veterinary Medicine, Veterinary Teaching Hospital, Perugia, Italy

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ABSTRACT

A 12-year-old Dutch Warmblood gelding was brought to the Veterinary Teaching Hospital (OVUD) of the University of Perugia (Italy) because of a six month history of hematuria and stranguria. A large mass in the bladder was detected by cystoscopy, and a transitional cell carcinoma was diagnosed. Further diagnostic investigations did not detect any metastatic spreading, and a therapy with cyclooxygenase 2 (COX-2) selective nonsteroidal anti-inflammatory drugs (NSAIDs) and antibiotics was started. After 1 month of therapy, the horse had worsened and euthanasia was elected. Necropsy showed local and systemic spreading of the tumor. Transitional cell carcinoma is a rare tumor in the horse. However, it should be considered in the differential diagnosis list for chronic hematuria and stranguria. A complete clinical and laboratory examination is required to have a definitive prognosis. The use of COX-2 selective NSAIDs has been advocated in some cases of carcinoma in both human and veterinary medicine, alone or together with the removal of the primary tumor with good results. Immunohistochemistry should be performed to detect the expression of COX-2 receptors by neoplastic cells to confirm the effectiveness of the NSAIDs therapy: a negative result denotes a poor prognosis and should call for euthanasia, especially if large tumors are detected.

1. Introduction

Tumors of the urinary tract are rare in the equine clinical setting, and squamous cell carcinoma is the most common neoplasia of the bladder. The presenting complaint is usually hematuria and weight loss, although pollakiuria and stranguria can also be present. Treatment should be started after an evaluation of the possible metastatic spreading of the neoplasia and is based on surgical excision, if possible, and adjunctive therapies, including chemotherapy, immunotherapy, and cryotherapy [1–3]. The aim of this work was to present a case of a transitional cell carcinoma in a 12-year-old Dutch Warmblood, highlighting the importance of a complete clinical and laboratory evaluation to obtain a definitive diagnosis and prognosis, which could help in planning the best treatment for the individual case.

2. Case Report

A 12-year-old Dutch Warmblood gelding was admitted to the OVUD due to a chronic 6-month history of hematuria and stranguria. The referring vet had begun treatment with antibiotics, with a partial improvement. On admission, the clinical examination was unremarkable. However, on rectal palpation, a mass was detected in the region of the bladder. Blood work and urinalysis were performed, together with abdominal and rectal ultrasound and cystoscopy. The blood work was unremarkable, but hematuria was detected on urinalysis and Proteus spp. was found on urine bacteriological examination. The ultrasound evaluation of the

* Corresponding author at: Sara Busechian, via San Costanzo 4, 06126, Perugia, Italy.
E-mail address: sara.busechian@fastwebnet.it (S. Busechian).

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urinary tract showed a mass located 10 cm cranially to the pelvis and expanding toward the left side; the surface showed a pattern compatible with fibrin deposit or blood clots. The ureter and kidney pictures were normal. The cystoscopy revealed a mass located on the ventral wall, which was growing toward, but not occluding the right ureter; its surface was ulcerated and covered with fibrin (Figs. 1 and 2). Endoscopic biopsies were performed during the examination, and histopathology diagnosed a transitional cell carcinoma, with the presence of neoplastic cells with squamous differentiation and areas of necrosis and fibrin deposition. An immunohistochemical analysis could not detect any expression of cyclooxygenase 2 (COX-2) receptors on the tissue. Collateral tests were conducted to detect the presence of metastasis: the ultrasonographic evaluation of the thorax and abdomen, the cytological evaluation of the abdominal fluid, sampled by means of abdominocentesis and the laparoscopy, with an examination of the surface of the abdominal organs and wall were all negative. A therapy with antibiotics (marbofloxacin 2 mg/kg IV q24 hours, based on sensitivity tests from the urine sample) and nonsteroidal anti-inflammatory drugs (NSAIDs; firocoxib, 0.09 mg/kg IV q24 hours) was initiated. After 2 months, the horse had clinically worsened and the mass had increased in size, and therefore, the owner elected euthanasia.

The necropsy showed that almost 90% of the urinary bladder mucosa had been replaced by a poorly demarcated mass, with an irregular and often ulcerated surface (Fig. 3). The mass was spreading dorsally and cranially, massively infiltrating the pelvic muscle and circumferentially surrounding, but not compressing the ureters. Two whitish nodules with central necrosis, approximately 10 cm in diameter, were noted in the pulmonary left caudal lobe.

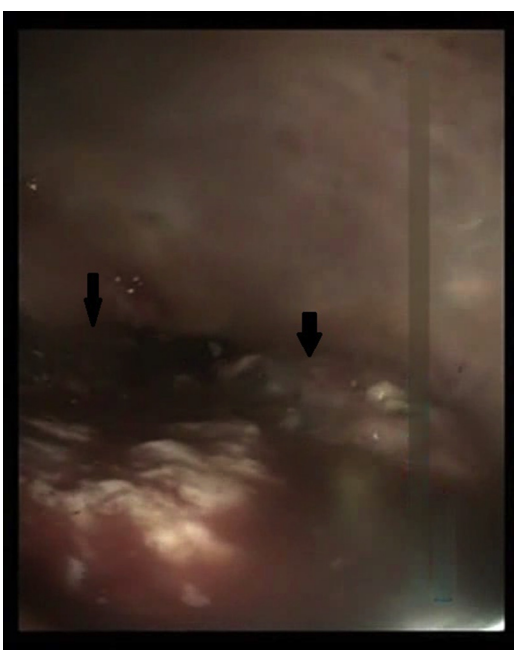

Fig. 1. Endoscopic view of the neoplastic mass (arrows) in the bladder.

Fig. 2. Endoscopic view of the wall of the bladder (arrows) and of the mass.

Histopathology (Fig. 4) showed that not only the urinary mass, but also the mass that invaded the pelvic muscles and the lung nodules were all characterized by a densely cellular, nonencapsulated, poorly demarcated and markedly infiltrative growing tissue. Neoplastic cells were arranged in cords, lobules, and trabeculae, supported by a moderate fibrovascular stroma formation. Anisocytosis and anisokaryosis were moderate, and mitoses ranged from 2 to 5 per high power field. Multifocally, the neoplastic cells showed squamous differentiation and central degeneration

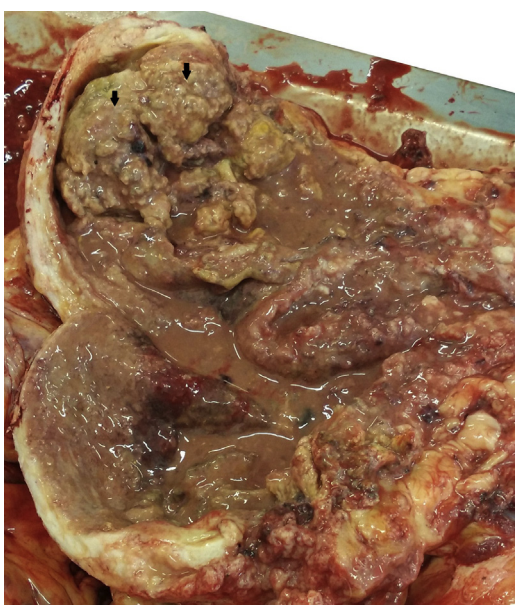

Fig. 3. Necroscopic picture of the bladder with the mass (arrows) in situ.