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Case Report

Rare case of testicular metastasis as a clinical manifestation of pancreatic adenocarcinoma

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ABSTRACT:
Clinical presentation of underling pancreatic adenocarcinoma (PA) manifested as a testicular metastasis is extremely rare pathology. Our case report is about 46 year's old patient with discomfort and chronic pain in the right testicle. Slight swelling, no redness of the skin, no fever. Pain in the epigastrium, loss of appetite, weight loss, nausea and vomiting. Right radical inguinal orchiectomy was performed. Pathohistological and immunohistochemical examination of the specimen revealed adenocarcinoma in rete testis with lymph vascular invasion in ductus deference. Imaging investigation revealed advanced tumor in the distal part of the pancreas. Metastatic tumors in the testis and epididymis represent a clinical manifestation of widespread dissemination of an advanced underlying malignancy, most commonly from the digestive system and usually with poor therapeutic and prognostic outcome.

Keywords: Pancreatic adenocarcinoma, metastases, testicle and epididymis.

INTRODUCTION:

Metastatic tumors to the testicles are rare. Common primary sites could be the prostate, lung, kidney, gastrointestinal tract and the skin (melanomas) (1).
Testicular metastases from pancreatic carcinomas are extremely rare and are usually seen in the late phase of the disease. Fewer than 10 cases have been reported in the literature to date (2).

A case of hydrocele has been described as the only clinical manifestation of metastatic pancreatic carcinoma (3).
Metastatic tumors of primary prostate cancer have been described and of the gastrointestinal tract (stomach and colon). The most common routes of metastasis to the testes are the lymphatics, vas deferens, the spermatic veins and the hematogenic (arterial) pathways (4), (5).

Median survival for locally advanced disease is just 6–10 months, however in patients with metastatic disease this falls to 3–6 months. Overall survival is 5 year less than 4% (6).

The incidence of PA is higher in men than women and the mean age at diagnosis was 69.9 years (7). Poor prognosis is related to four factors: subtle presentation, tumor aggressiveness, technically difficult surgical resection, and few effective systemic therapies (8), (9).
Pancreatic Adenocarcinoma by itself is associated with high mortality and morbidity. It is the fifth commonest cause of cancer death in the world (10), (11).

Aim: To focus on the existence of rare distant metastatic malignancies to the testicles. who are the main clinical manifestation and to emphasize on their role for the detection of the underling primary disease.

Case presentation: Patient 46 years old, with discomfort and chronic pain in the right testicle. Slight swelling, no redness of the skin, no fever. Pain in the epigastrium, loss of appetite, weight loss, nausea and vomiting. Treated as an

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"acute epididymitis" with antibiotics, nonsteroid anti-inflammatory medications and vitamins. No clinical improvement in the local findings or the general symptoms.

Physical examination reveals slightly enlarged right scrotal half, without any evidence of an acute inflammatory changes, like redness of the skin or pain. The testicle is with normal size and consistency. The epididymis is slightly enlarged, painful with firm consistency.

Laboratory investigation: Complete blood count- Leucocytes 13, 3, erythrocytes 4, 32, hemoglobin 127 g/l, hematocrit 0, 36, thrombocytes 494. Glucose 7,3 (mmol/L), urea 10,3 (mmol/L), creatinine 141,0(µmol/L), total protein 72,0 g/L. Tumor markers- AFP and HCG normal range. Urinalysis: Protein- traces, urobilinogen - not increased, bilirubin - negative, ketone bodies - negative, sediment - single erythrocytes, leukocytes and flat epithelial cells.

Ultrasound examination revealed no pathological changes in the testicular structure. The epididymis is slightly enlarged with a homogeneous structure.

"A malignant process of the epididymis was suspected. We performed right radical inguinal orchiectomy. Pathohistological and immunohistochemical examination of the specimen revealed adenocarcinoma in rete testis with lymph vascular invasion in ductus deference. No evidence of invasion in the testicular tissue or the epididymis."

Fig.1

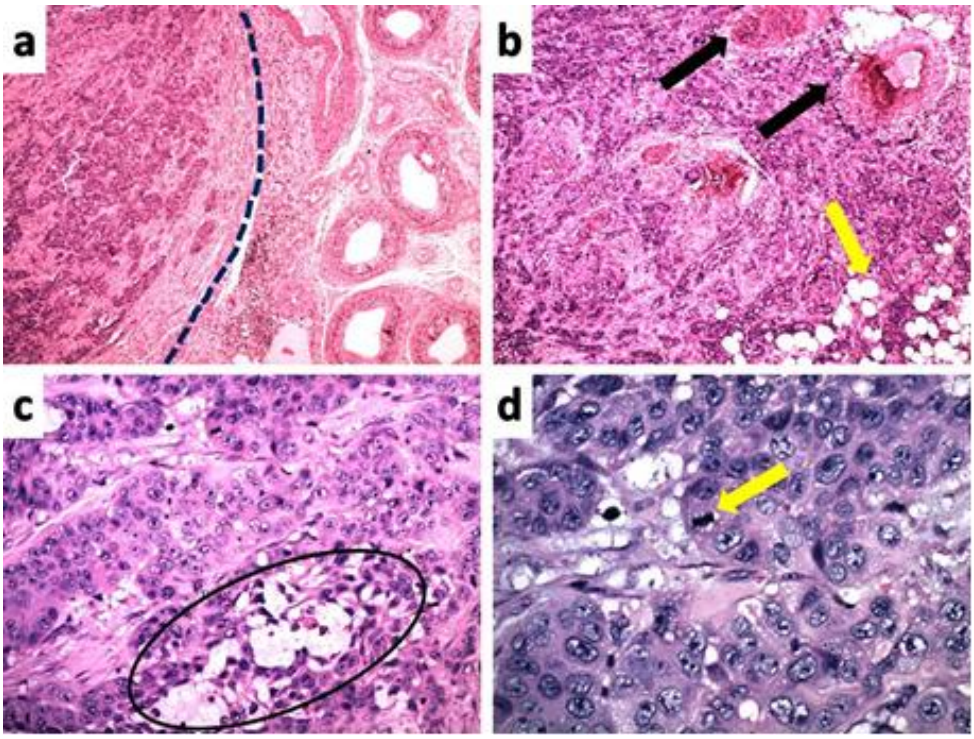

Fig. 1.

a) A cross-section of the epididymis demonstrates normal tubules of the epididymis (right) and infiltration of nests and cords of atypical cells (left) (hematoxylin eosin, magnification x 40).
b) A cross-section of the testis demonstrates infiltration of nests and cords by atypical cells between blood vessels (black arrows) and adipose tissue (yellow arrows) of seminal cords (hematoxylin eosin, magnification x 40).
c) Some areas of the tumor shows an acinar structure (enclosed in black) (hematoxylin eosin, magnification x 100).
d) The tumor is composed exclusively of polymorphic, atypical cells with enlarged distinct nuclei and numerous mitoses (yellow arrows) (hematoxylin eosin, magnification x 200).

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Fig.2

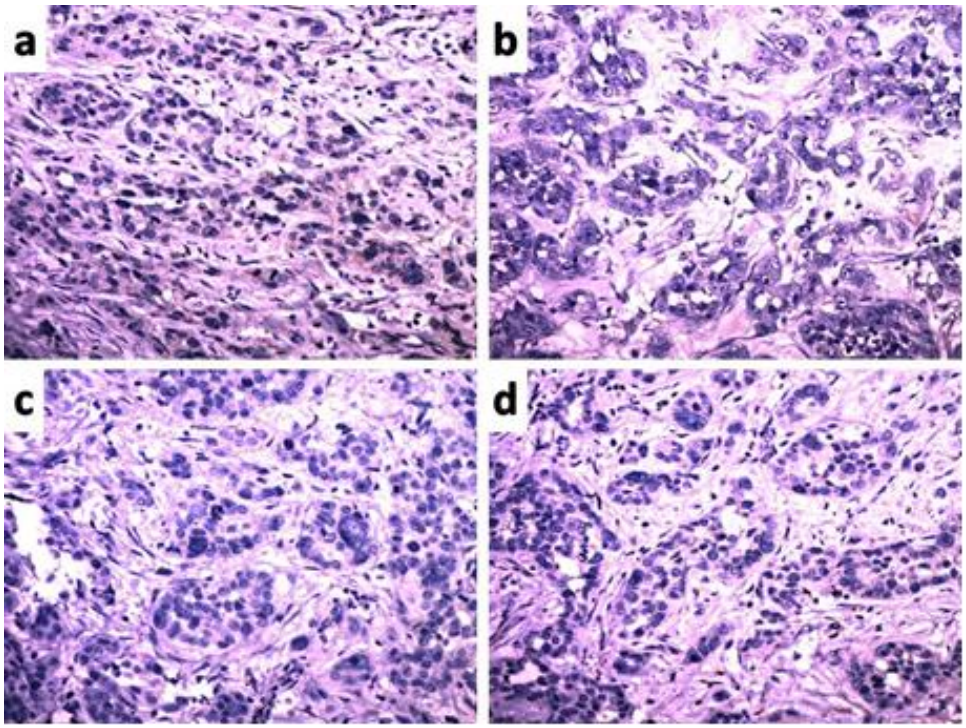


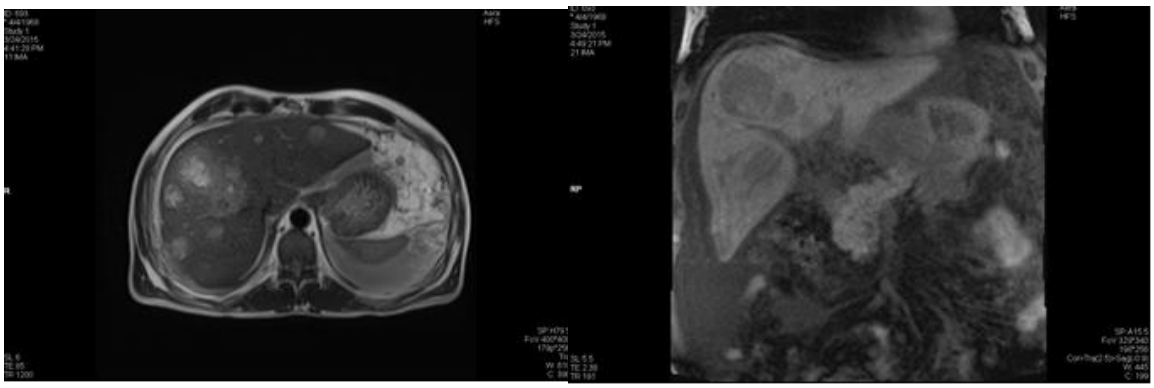
Fig. 2.

a) Tumor cells showing a negative immunohistochemical reaction to calretinin (magnification x 100).
b) Tumor cells showing a negative immunohistochemical reaction to CDX 2 (magnification x 100).
c) Tumor cells showing a positive immunohistochemical response to EMA (magnification x 100).
d) Tumor cells showing a negative immunohistochemical reaction to PSA (magnification x 100).

The histological diagnosis of adenocarcinoma and patient's complaints of epigastric pain, loss of appetite, nausea, vomiting and weight loss rises the suspicion of a primary malignancy in the digestive system.

Magnetic resonance of the abdomen revealed:

Enlarged liver with some disproportion between the liver segments. Multiple, different in size lesions involving all liver segments were identified. Advanced tumor in the distal part of the pancreas with infiltration of the stomach.



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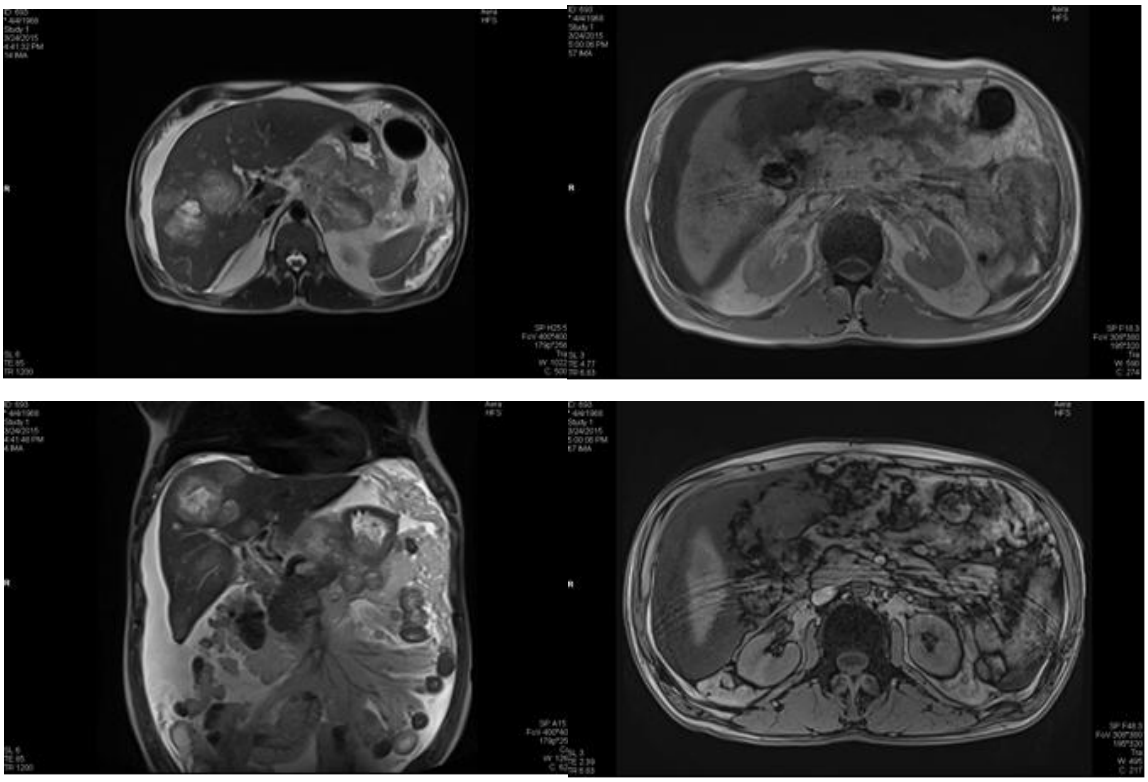

Clinical evaluation:

Patients with PA have nonspecific symptoms, such a nausea or anorexia, which may delay diagnosis for weeks to months. When appear weight loss, abdominal pain or gastrointestinal symptoms, PA is usually advanced (12).
PA is characterized by extraordinary local tumor progression and early systemic dissemination (13).

PA usually metastasizes to regional nodes, liver, adjacent organs and lungs (14), (15) and the incidence of brain metastases is extremely low, which may result in the low reported incidence of the metastatic brain tumors from pancreatic cancer (16).
Distant involvement of the testicle is very rare.

DISCUSSION:

Based on these data, it is considered to be a metastatic tumor in rete testis from pancreatic adenocarcinoma. Metastatic tumors of the testis and epididymis are a clinical manifestation of dissemination of an advanced underlying malignancy. Most often from the digestive system. Cordon involvement suggest the spread of the tumor along vas deferens. The primary clinical manifestation of these tumors by their metastases in the testis and epididymis is extremely rare. Cases of a pancreatic adenocarcinoma manifested and diagnosed by testicular or epididymal metastases often means a poor therapeutic and prognostic outcome.
Chemo and radiotherapy are the only therapeutic options, but they also have a dubious therapeutic response.

The rarity of these cases in clinical practice and their atypical clinical manifestation creates diagnostic challenges for the clinician and the pathologist.
PA is seated deep in the retroperitoneum and typically infiltrates a network of crucial arteries, veins and nerves that supply or drain the liver, spleen, stomach, pancreas, large and small bowel (17), (18), (19), (20), (21), (22), (23), (24), remains one of the most challenging tumors to treat.

CONCLUSION:

Metastatic tumors in the testis and epididymis represent a clinical manifestation of widespread dissemination of an advanced underlying malignancy, most commonly from the digestive system.

The involvement of the cordon suggests the spread of the tumor along vas deferens.
Primary clinical manifestation of these tumors by testicular and epididymal metastases is extremely rare with poor therapeutic and prognostic outcome.

The current case report is an evidence for the aggressive biological behavior of the pancreatic adenocarcinoma and its high metastatic potential. The performed radical orchiectomy was of diagnostic importance for the detection of the underlying pancreatic adenocarcinoma. Patients with PA are generally unsuitable for curative surgical treatment.

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