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THE "KRUKRNBERG" TUMOR IN MALE.

Mahlknecht Alois, Pecorari Valentina and Gschwendeter Andreas[1].

Urology Dept. Tappeiner Hospital. Meran. Italy.
Pathology Institute[1]. Innsbruck University. Innsbruck. Österreich.

Summary.- *OBJECTIVES: The ovarian metastasis by a gastrointestinal cancer is called Krukenberg tumor. We report a case of metastasis to the testis and epididymis by gastric cancer that can be the analogue in male.*

METHODS: A patient, submitted to total gastrectomy for a poorly differentiated gastric adenocarcinoma (TNM stage: pT3 GIII N+ M1) developed one year later a painful swelling of the right hemiscrotum and groin. The palpation revealed a painful mandarine-like mass conglobated in the right testis and epididymis, with a further mass at the external inguinal-ring and multiple little nodes along the spermatic cord. An inguinal orchifuniculectomy was performed and the histological tests described a poorly differentiated, microtubular adenocarcinoma, infiltrating the connective tissue, without spreading to the testis, that was properly structured. The atypical tumor formations expressed carcinoembryonal antigen, but were negative for -HCG and PSA. The immune-histochemical results confirmed the diagnosis of an adenocarcinoma.

RESULTS / CONCLUSION: The metastasis in testicles and / or epididymus are rare and cannot be differentiated clinically or by imaging procedures from a primary testicle neoplasia. Only the exact anamnesis of previous tumors and the age can provide some indications. The therapy of choice is however represented by inguinal orchifuniculectomy.

Keywords: *Krukenberg. Testis metastasis. Metastatic gastric cancers.*

Resumen.- *OBJETIVOS: Las metástasis ováricas por un cáncer gastrointestinal son conocidas como tumor de Krukenberg. Presentamos un caso de metástasis testicular y de epidídimo por un cáncer gástrico que puede ser el caso análogo en el hombre.*

MATERIAL Y METODOS: Un paciente referido para gastrectomía total por un adenocarcinoma gástrico indiferenciado (Estadio TNM: pT3GIII N+ M1) desarrolló un año después una inflamación dolorosa de hemiescroto e ingle derechos. La palpación revelaba una masa dolorosa del tamaño de una mandarina englobando testículo y epidídimo derechos, junto con otra

Address Correspondence to:
Valentina Pecorari
Ospedale Tappeiner
Urologia
v. Rossini 5 – 39012 MERANO (BZ)
Tel. 0039 0473 264020 – Fax 0039 0473 264385
e-mail: valentina.pecorari@libero.it

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masa en el anillo inguinal externo y multiples nódulos pequeños a lo largo del cordón espermático. Se realizó Orquiofuniculectomía y el estudio anatomopatológico refirió un adenocarcinoma pobremente diferenciado, microtubular, que infiltraba el tejido conectivo sin extensión al testículo, que conservaba su estructura. Las formaciones tumorales atípicas expresaban antígeno carcinoembrionario y eran negativas para HCG y PSA. Los resultados inmonohistoquímicos confirmaron el diagnóstico de adenocarcinoma.

RESULTADOS/CONCLUSIONES: Las metástasis testiculares y/o del epidídimo son raras y no se pueden diferencias clínicamente o por pruebas de imagen de los tumores testiculares primarios. Solamente una historia clínica exacta de tumores previos y la edad pueden suministrar alguna indicación. El tratamiento de elección es la orquiofuniculectomía inguinal.

Palabras clave: *Krukenberg. Metástasis testicular. Cancer gastrico metastásico.*

INTRODUCTION

In 1896 Krukenberg (1) described an unusual form of an ovarian metastasis by a gastrointestinal cancer. The analogue in male, a metastasis to the testis or epididymis by a primitive gastric cancer is extremely rare. We report an unusual metastasis to the testis and epididymis, which has all criteria to be called Krukenberg-tumor.

CASE REPORT

W.A., a 68 years old patient, was submitted to total gastrectomy in 1994. Histologically it was described a diffuse, poorly differentiated gastric adenocarcinoma with multiple lymph node metastases along the greater and lesser gastric curvature and an isolated lymph node metastasis in the splenic hilum (TNM stage: pT3 GIII N+ M1).

One year later the patient developed a light painful swelling of the right hemiscrotum and groin. The palpation revealed a painful mandarine-like mass conglobated in the right testis and epididymis, which seemed to be connected with a further mass, about as big as a chestnut, at the external inguinal-ring. Multiple little nodes were also palpable along the spermatic cord.

Imaging results (ultrasound scan and TC) revealed several cystic lesions, which seemed apparenty connected with the abdominal ring and which surrounded the spermatic cord, creating an external compression on the testicles, although the testes seemed not to be infiltrated.

The pre-operating laboratory tests showed an increased CEA with 69,7 ng/ml (normal <6 ng/ml) where the α-Fetoprotein was in the standard range, 5,9 IU/mi (normal < 8.5 IU/mi) and βHCG was borderline increased (6,4 mIU ; normal value <5 mIU). An inguinal orchifuniculectomy was therefore performed.

Macroscopically (Figure 1) it appeared a 4x2x2 cm testicle with a 5 cm long portion of the seminal vessel. The epididymis was 2 cm in diameter and contained several cysts up to 4 cm with clear content.

Along the spermatic cord there were further up to 2 cm partially bloody cysts.

The histological tests (Figures 2, 3) described a poorly differentiated, microtubular adenocarcinoma. The tumor was coarsely infiltrating the connective tissue, without spreading to the parenchyma of the testis, that was however properly structured.

Other adenocarcinomatous cells were described in the scrotal-interstitium, mainly in the lymph sinus. The tumor formations extended along the spermatic cord directly to the resection edge.

The material was moreover examined immunologically. The atypical tumor formations expressed carcinoembryonal antigen, but were negative for βHCG and PSA. The immune-histochemical results confirmed the suspected diagnosis of an adenocarcinoma.

Primarily we have thought of a metastasis, both for the marked lymphangiosis and for the diffuse growth.

The tumor formations infiltrated diffusely the seminal vessel as well as the epididymis and could not be assigned to testicle structures.

The patient died four months after the surgical operation because of the rapid tumor dissemination (peritoneal carcinosis, ascites) and progressive tumoral cachexia.

DISCUSSION

We must presume a metastasis in testicles and/or epididymus as in any other organ if the tumor's histology doesn't correspond to the classic histology of the primary common testis' cancer. These situations however, are rare.

Excluding lymphomas and leukaemias, the metastasis constitutes only 0.9% of all testicular tumors. The tumor propagation is in most cases hematogenous and lymphogenous (2,3) and only rarely, as in our case, caused by continuity.

This applies particularly to prostate and kidney tumors, particularly the RCC (renal cell carcinoma), that has a tendency to vascular invasion. They can give metastasis to the epididymus and subsequently to the testicle through the V. renalis and the V.spermatica.

A further possible dissemination pathway is the retrograde through the lymph vessels and along the spermatic cord.

Zuk and some other authors (4-6) considerate also a dissemination pathway over the abdominal ring and over an open Haller's habenula. Thus they observed cases of tumor metastasis to the testicle by a disseminating gastric cancer, that they call exactly Krukenberg-tumor of the testicle.

Testicle and epididymus metastasis neither can be differentiated clinically nor by imaging procedures from a primary testicle neoplasia. The presentation is in fact the same, characterized by a painless, irregular volume increase as in typical testicle tumor.

Only the exact anamnesis of previous tumors and the age can provide some indications. In fact the occurrence of primary testicle tumors is rare in patients of over 40 years of age, while the frequency peak in the metastasis lies more or less between the 6th and the 7th life decade.

The therapy of choice is represented clearly by inguinal orchifuniculectomy.

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