Rare metastases of pancreatic tail carcinoma in female genital organs

M. Zamurovic, I. Pesic-Stevanovic

University Clinic for Obstetrics and Gynecology "Narodni Front", Belgrade (Serbia)

Summary

A case is presented of pancreatic tail carcinoma metastasizing to the uterus, right ovary and right sacrouterine ligament 2.5 years after the primary tumor had been detected and treated. During explorative laparotomy, performed after 3D color Doppler ultrasonographic visualization of a suspected finding in the right adnexal region, metastatic deposits in the uterus, right ovary, right sacrouterine ligament and right ureter originating from the primary adenocarcinoma of the tail of the pancreas were detected and surgically removed.

Key words: Pancreatic tail carcinoma; Urogenital metastases; Pancreatic carcinoma metastases.

Introduction

Primary carcinoma of the pancreas accounts for 1-2% of all carcinomas. It may appear at any age, however, it is most frequent in the period between the sixth and eighth decade of life [1], while according to some authors, two-thirds of the patients are between 40 and 60 years old [2]. It is two times more frequent in men than in women. The incidence of pancreatic carcinoma is constantly increasing, but early diagnosis of this tumor is still a difficult issue. It is usually detected late, when it is impossible to undertake radical treatment.

Pancreatic carcinoma usually occurs in the head of the pancreas (60-70%), followed by the body (20-30%), while it is least frequent in the tail of the pancreas (5-10%).

One of the characteristics of pancreatic carcinoma is its tendency to spread along the perineural lymph spaces, followed by invasion into the surrounding tissues, such as the duodenum, choledochus, stomach, inferior vena cava, upper mesenteric and portal vein, and celiac trunk. Thus, early metastases to the liver represent a very common finding in cases of pancreatic head carcinoma, and they usually result as a consequence of tumor spread by direct invasion, while hematogenous and lymphogenous metastases are more frequently found in carcinomas of the body and tail of the pancreas. These carcinomas spread into the retroperitoneal space, while deep invasion of the tumor into the perineural lymph spaces as well as infiltration into the celiac plexus causes deep pain [3].

Almost as a rule, carcinoma of the head of the pancreas metastasizes to the liver early, while carcinoma of the tail of the pancreas spreads to the peritoneum. Metastases to the brain, heart, pericardium, skin and subcutaneous tissue has been described in the literature, but it is rare, extremely rare in the ovary, uterus, bladder and thyroid gland, testicle, prostate and rectum. It is, however, interesting to note that, in a noticeable percentage of cases (even up to 15%) autopsy has not detected metastases to other organs [2].

Case Report

The case of a 50-year-old patient, whose primary carcinoma of the tail of the pancreas was verified, surgically and chemotherapeutically treated and, 2,5 years after detection and treatment metastasized to the uterus and ovary is presented.

Discomfort started six years earlier when the patient went to a gastroenterologist due to problems with irregular bowel movements (constipation followed by diarrhea, etc.). Irritable colon was diagnosed. Administered therapy only partially reduced the discomfort. During utrasonographic (US) examination, a small cystic tumefaction, localized in the tail of the pancreas, towards the spleen, was visualized. Three years after discomfort started, when the patient was undergoing regular check-ups, US examination visualized first small and later significant growth of the previously mentioned cystic tumefaction. The cyst had grown from an initial 4 x 4 cm to 8 x 9 cm. The patient complained only about sporadic weak, dull pain in the left hypochondrium, which occasionally spread towards the left scapula. At that time the value of tumor marker CA 19.9 was over 8000 IU/ml. Surgical treatment was indicated. Existence of a malignant pancreatic tail tumor with infiltration in the left adrenal gland was intraoperatively confirmed. Resection of the distal part of the pancreas and splenectomy were performed and histopathological findings verified invasive pancreatic ductal adenocarcinoma with caudal localization. Chemotherapy was administered over 12 cycles, followed by regular US and computed tomography (CT) check-ups and monitoring of the values of tumor marker CA19.9, which gradually decreased to normal. Two years later values of the tumor marker started to increase again. The patient had no discomfort, and US and CT findings were without signs of disease. Six months later dull pain in the pelvis appeared, accompanied by an increase in the value of tumor marker CA 19.9. None of the applied diagnostic methods, including CT, nuclear magnetic resonance imaging, digestive endoscopic metods, irrigography, scintigraphy, nor a complete neurological examination were able to find the cause of the discomfort nor the reason for the increase of tumor marker value, i.e., non of

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them were able to pinpoint the primary disease. The patient was sent to the University Clinic, Gynecology and Obstetrics Department, for a gynecological exam. Bimanual exam determined a slight sensitivity in the right adnexal region. Colposcopic findings and Pap smear were normal. A slight lesion in the right adnexal region approximately 25 mm in size was visualized by transvaginal color Doppler US examination. It was irregular in shape with flow magnification and low resistance in blood vessels. Exploratory laparotomy was suggested. Exploration of the abdomen revealed the existance of a maligant tumor of the genital organs. Tumor tissue slightly infiltrated the uterine cervix, right sacrouterine ligament, right parametrial region and pelvic blood vessels, and furthermore infiltrated the distal part of the right ureter. At about 2 cm from the ostium of the right ureter into the bladder tumor tissue had formed a stricture of the ureter. Total hysterectomy with bilateral salpingo-oophorectomy, deliberation and resection of the distal part of the right ureter and its implantation into the bladder were performed, as well as lymphadnectomy of the right inguinal region. Histopathological findings verified metastases of the seromucinous adenocarcinoma originating from the primary adenocarcinoma of the tail of the pancreas.

Discussion

Pancreatic carcinoma has been ranked as the fifth cause of death for patients suffering from malignant diseases, even though it accounts for only 1-2% of all primary carcinomas, considering the fact that it results in lethal outcome in over 98% of cases [4]. High pancreatic carcinoma mortality can be explained by the fact that it is usually detected in advanced stage, i.e., it metastasizes to the liver early, either by direct invasion into the surrounding organs and large blood vessels - lienal, mesenteric, and portal vein, or even by lymphogenous or hematogenous spread. Rare and non-specific forms of this carcinoma also exist, significantly complicating already difficult diagnostics [5]. Thus, the time period between the time of definite diagnosis and death is relatively short [1].

Distant mestatases are a rare finding. According to reports from the literature, incidence of hematogenous metastases in the liver is 31.3%, lungs 1.8%, adrenal gland 1.1% and the navel 0.4%. Other localizations of secondary deposits, developed either by lymphogenous or hematogenous spread, are very rare and present in less than 0.01% of cases [6].

Metastases of pancreatic carcinoma to the organs of the urogenital tract are extremely rare. Up to now only two cases of secondary deposits in the spermatic cord and prostate gland have been described. In both cases the primary tumor was discovered only after secondary deposits were detected [7]. In addition to this, one case of metastatic paratesticular mucinous adenocarcinoma with invasion to the testicle and epididymis was described, whose primary origin was in the pancreas [8].

The literature contains data of a total of 342 cases of metastases to the ureters, whereas only in two cases the primary tumor was in the pancreas, more precisely in the head of the pancreas [9].

Metastases of pancreatic carcinoma in the female genital system (in the ovary) have been described only a few times. In two cases metastatic carcinomas of the ovary were detected before detection of the primary pancreatic carcinoma [10]. Other cases of pancreatic carcinoma metastases in the ovary were detected in the autopsy material [6].

Metastases of carcinoma of the tail of the pancreas into the ovary, uterus, sacrouterine ligament and the ureter are extremely rare events, especially considering the fact that in the described case there were no metastatic changes in the liver, which would represent an expected finding, as well as the fact that more than 2.5 years had passed since the discovery of the primary tumor, and that survival rate in this period is very low.

References

[1] Verma M.: "Pancreatic cancer epidemiology". *Technol. Cancer Res. Treat.,* 2005, *4,* 295.
[2] Freelove R., Walling A.: "Pancreatic cancer: diagnosis and management". *Am. Fam. Physician*., 2006, *73*, 485.
[3] Fukushima N., Mukai K.: "Pathologic characteristics and evaluation of the pancreatic cancer". *Gan To Kagaku Ryoho.,* 2005, *32,* 599.
[4] Jemal A., Tiwari R.C., Murray T., Ghafoor A., Samuels A., Ward E. *et al*.: "Cancer statistics, 2004". *CA Cancer J Clin.,* 2004, *54,* 8.
[5] Kosmahl M., Pauser U., Anlauf M., Kloppel G.: "Pancreatic ductal adenocarcinomas with cystic features: neither rare nor uniform". *Mod. Pathol*., 2005, *18*, 1157.
[6] Matsuno S., Kato S., Kobari M., Sato T.: "Clinicopathological study on hematogenous metastasis of pancreatic cancer". *Jpn. J. Surg.,* 1986, *16,* 406.
[7] Bandyopadhyay D., Kapadia C.R., Da Costa P.E.: "Pancreatic carcinoma: report of two cases presenting with unusual metastases". *Indian J. Gastroenterol.,* 2005, *24,* 75.
[8] Seo I.Y., Kim S.G., Han W.C., Rim J.S.: "Paratesticular mucinous cystadenocarcinoma: metastasis from pancreatic cancer". *Int. J. Urol*., 2004, *11,* 1147.
[9] Haddad F.S.: "Metastases to the ureter. Review of the world literature, and three new case reports". *J. Med. Liban*., 1999, *47,* 265.
[10] Peruccini D., Caduff R., Schar G., Fink D., Kochli O.R.: "Ovarian metastasis of extragenital tumors at the Zurich University Ginekologic Clinic 1978-1990". *Geburtshilfe Frauenheilkd.,* 1996, *56,* 351.

Address reprint requests to:
M. ZAMUROVIC, M.D.
University Clinic for Obstetrics and Gynecology
"Narodni Front"
62, Kraljice Natalije St.
11000 Belgrade (Serbia)
e-mail: mzamurovic@gmail.com