FIBROMATOSIS OF THE PANCREAS

FIBROMATOZA TRZUSTKI

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SUMMARY

Fibromatosis is a rare neoplasm of soft tissues originated in muscular and fascial structures. It occurs in diverse localizations intra- and extra-abdominal and is characterized by aggressive growth and infiltration of neighboring tissues as well as lack of remote metastases. The treatment still poses a serious challenge with regard to frequent topical recurrences.

This paper aims to present a case study of a woman aged 30, diagnosed with fibromatosis and operated on due to pancreatic tumor at The Clinical Division of Oncology, Endocrinology and General Surgery in Kielce. Re-operated because of the presence of turbid liquid (pancreatic juice) in the inter loop space and an extensive hematoma over the left lobe of the liver, under the left phrenic dome and in the area of the left flexure of colon. Presentation of an own case of fibromatosis of the pancreas is dictated by an exceptional rarity of its occurrence and by increased risk of complications after surgical treatment of pancreatic tumors, including fibromatosis. Diagnosis as well as the choice of proper treatment methods often causes difficulties. Resection within wide range remains a treatment of choice, whereas the role of radiotherapy and chemotherapy together with the use of hormones is still the matter of investigation.

Key words: desmoid, desmoid tumor, fibromatosis, musculaponeurotic fibromatosis, aggressive fibromatosis.

STRESZCZENIE

Fibromatoza jest rzadkim nowotworem tkanek miękkich, wywodzącym się ze struktur mięśniowo-powięziowych. Występuje w różnorodnych lokalizacjach wewnątrz- i pozabrzusznych, charakteryzuje się agresywnym wzrostem i naciekaniem sąsiednich tkanek oraz brakiem przerzutów odległych. Leczenie jest wciąż poważnym wyzwaniem ze względu na częste wznowy miejscowe.

Celem pracy jest opis przypadku fibromatozy rozpoznanej u 30-letniej kobiety operowanej z powodu guza trzustki w Klinicznym Oddziale Chirurgii Ogólnej, Onkologicznej i Endokrynologicznej w Kielcach. Pacjentkę reoperowano z powodu stwierdzenia mętnego płynu (sok trzustkowy) międzypętlowo oraz rozległego krwiaka nad lewym płatem wątroby, pod lewą kopułą przepony i w okolicy lewego zagięcia okrężnicy.

Prezentacja własnego przypadku fibromatozy trzustki jest podyktowana wyjątkową rzadkością występowania tego nowotworu oraz zwiększonym ryzykiem powikłań po leczeniu chirurgicznym guzów trzustki, w tym także fibromatozy. Zarówno rozpoznanie, jak i wybór właściwych metod leczenia często sprawia trudności. Resekcja w szerokich granicach pozostaje leczeniem z wyboru, natomiast rola radioterapii i chemioterapii oraz zastosowania hormonów jest wciąż przedmiotem badań.

Słowa kluczowe: desmoid, guz desmoid, fibromatoza, fibromatoza mięśniowo-powięziowa, agresywna fibromatoza.

INTRODUCTION

Fibromatosis (fibromatosis, desmoid, desmoid tumor, aggressive fibromatosis) is a rarely occurring neoplasm, originated in muscular and fascial space [1, 2, 3]. It is characterized by infiltrating growth, frequent topical recurrences and lack of remote metastases [2, 3]. Most frequently it develops in integument scars after abdominal surgery, but different intra- and extra-abdominal localizations, even such atypical as breast gland are also possible [4, 2]. In the etiology of fibromatosis attention is paid to the role of injury (postoperative scars), hormonal factors (regression under the influence of tamoxifen and oral contraceptive agents as well as during menopause was observed) and genetic factors (it is an element, among others things, of Gardner syndrome) [3]. Clinical picture of fibromatosis resembles soft tissues sarcoma with low

malignancy. The most effective method of treatment is complete resection, complementary treatment still constitutes the research subject. Main problems relate to high risk of recurrence. Mortality is connected with the process of growing into neighboring organs and loss of their functions as a consequence.

CASE STUDY

Case of a woman aged 30, admitted to The Clinical Division of Oncology, Endocrinology and General Surgery due to abdominal pain, febrile body temperature, weight loss of 5 kg/6 months. She notified intra-abdominal and left sub-costal area suffering, radiating to the back with variable intensification, lasting around one month; intensification of pain during last 2 days. Irregular fever up to 38.5°C for 2 weeks. Without symptoms of patency disturbances in alimentary tract. With a medical history of allergy to grass pollen, renal colic, apart from that without chronic diseases, without serious past diseases. So far not operated on.

At the time of admission general state average, without traits of emaciation (BMI 20,8), stomach soft, painful in the left sub-costal area during deep palpation, without pathologic resistance, without other deviations on physical examination. Temperature, pulse, arterial pressure within the norm. Cyprofloxacin 2×0.2 iv., analgesic drugs, diastolic drugs and intravenous liquids were applied which resulted in the reduction of complaint. Laboratory investigation showed normal peripheral blood cell count and biochemistry (AST – 19 U/l; ALT – 13 U/l; GGT – 12 U/l; glucose – 80 mg/dl; bilirubin – 1.11 mg/dl; urea – 23 mg/dl; creatinine – 0.84 mg/dl; amylase in serum – 41 U/l; Na^+ – 137 mEq/l; K^+ – 3.9 mEq/l). Within coagulation system irrelevant elongation of prothrombin time (PT – 13.4"; INR – 1.1). Neoplasm markers: CEA – 0.56 ng/ml, CA19-9 – 6,78 U/ml. Radiogram of the chest did not demonstrate changes. Panendoscopy – normal endoscopic image of esophagus, stomach and duodenum, H. pylori test negative. USG of abdominal cavity – solid change with dimensions of 80/60 mm in the area of the tail of the pancreas, other pathologies not found. TK of abdominal cavity was performed, hypodense growth with dimensions of 74/56 mm was found, connected with the tail of the pancreas and overgrowing its parenchyma, with liquid space within, apart from that the picture was normal. The patient was discharged from hospital without complaint, qualified for surgery. Operated on after 2 weeks according to a schedule, intra-operative examination revealed a solid tumor of the body of the pancreas with circa 100 mm in diameter, modeling vessels of the spleen and infiltrating the mesentery of transverse colon. Stuck loop of the transverse colon was separated, the change was qualified for resection. Peripheral resection of the body and tail of the pancreas together with the spleen and infiltrated fragment of the mesentery of transverse colon was performed, the stump of the pancreas, after previous catheterization of pancreatic duct and disclosing of free passage to duodenum, was provided with sutures.

Procedure without complications, within early days after surgery patient's condition stable, glycaemia within the norm, morphology without major loss. From the seventh day efflux of sanguineous contents from drains. On the eighth day increase of the amount of blood from drains, tachycardia and decrease of RR. USG showed a growing hematoma in site of the spleen and the case was qualified for relaparotomy.

Re-operated on the ninth day because of the presence of turbid liquid (pancreatic juice) in the inter loop space and an extensive hematoma over the left lobe of the liver, under the left phrenic dome and in the area of the left flexure of colon.

Blood and blood clots were removed, peritoneal cavity washed out, bleeding places in site of the removed spleen taken care of, mainly on the diaphragm surface. Drains were replaced. On the day of the surgery as well as on the second and third postoperative day a total of 5 units KKCz and 9 units FFP, albumin were transfused. Drains contents sero-sanguineous, later with features of pancreatic juice (high concentration of amylase). Pancreatic fistula showed little activity – initially 200–300 ml per day, its symptoms fully disappeared on the eighth day after the second operation. On the tenth day drains were removed. Further treatment uncomplicated, the wound healed by primary adhesion, full recovery achieved. On the thirteenth day the patient was discharged from hospital in good general condition.

Histological examination revealed: 1. "The spleen 14 cm in length with a fragment of the tail of the pancreas with dimensions of 12×8×6,5 cm. Within the pancreas not very well separated solid, fibrous, myxoid tumor with dimensions of 10×6×5 cm. Cross-section of the spleen without focal lesion. 2. "Infiltration in the mesentery" – two fragments of fibrous fatty tissue up to 2 cm in diameter. Fibromatosis. Lien hyperemicus. Effusiones haemorhagicae recentes texti adiposi hili lienalis. Lyphadenitis chronica non specifica reactiva regionalis. Pathologic changes comprise stuffing of the pancreas, peri-pancreatic fatty tissue and mesentery segments" (dr n. med. P. Lewitowicz, dr n. med. A. Urbaniak). Specimens were

examined again at The Oncology Center in Warsaw, where the primary diagnosis was confirmed.

Then the patient was consulted at The Oncology Center in Warsaw, where she wasn't qualified for complementary treatment, periodic check-up was advised, including TK and USG.

At present she stays under supervision of maternal Hospital Department and Outpatient Clinic, in early months several episodes of febrile body temperature, atypical abdominal ailments – reason remained unknown (without deviation on complementary examination). Suffering disappeared, the patient returned to the initial weight, without notification of digestive tract ailments. Dysfunctions of extra- and endocrine activity of the pancreas were not reported. After 2 years from diagnosis follow-up picture examinations (USG and TK) do not show signs of recurrence.

Elaboration

Presentation of an own case of fibromatosis of the pancreas is dictated by an exceptional rarity of the occurrence of this neoplasm. Descriptions of fibromatosis of the pancreas are very rarely presented in medical writing. Surgical treatment of tumors of the pancreas, including fibromatosis, involves high risk of complications.

Depending on the localization superficial or deep forms can be distinguished. The most frequent location of superficial fibromatosis is palmar aponeurosis (palmar fibromatosis – Dupuytren's contracture), rarely – foot sole and penis. Deep form of fibromatosis is significantly rare [5, 6]. In patients aged between 20 and 40 women are those who suffer more often, and pathologic change usually concerns abdominal integument, rarely retroperitoneal space and mesentery [7]. In general population it occurs with a frequency of 2–5:1 mln and accounts for 0.03% of newly diagnosed neoplasm as well as 3% of connective tissue neoplasm [2, 4]. In patients with a history of familial adenomatous polyposis the risk of fibromatosis occurrence amounts to 13% [4].

From histological perspective fibromatosis is a heterogenic structure characterized by weak separation from neighboring tissues and infiltrating growth which consists of elongated a little atypical spindle-shaped cells (fibroblast type) with a few mitotic figures. It differs from fibrosarcoma in lower number of mitosis, lower nuclear-cytoplasmic index and an increased amount of collagen and immunological cells. In differential diagnostics immunohistochemical examination toward wimentin, actin and desmin are helpful [4].

Two main types of fibromatosis can be distinguished – occasional and hereditary, related to following syndromes: FAP, familial adenomatous polyposis (including Gardner syndrome), FIF (familial infiltrative fibromatosis) and HDD (hereditary desmoid disease) [2]. In both forms mutations in gene APC were found, and in the occasional form also in beta-katenin gene, as the cause of neoplastic change. The pancreas is a rare localization, but it is considered to be more typical for occasional form, whereas in the course of FAP mesentery fibromatosis is more frequent [8]. Apart from some clinical similarities to GIST, gastrointestinal stromal tumors, excessive expression of c-Kit (CD117) receptor in fibromatosis wasn't found, and, subsequently, the effectiveness of imatynib group drugs therapy wasn't explicitly proved [1].

Diagnosis is based on history, physical examination and complementing examination.

Medical history should reveal the most typical localization, i.e. front abdominal cavity wall, past injury – especially surgical procedure – and familial adenomatous polyposis symptoms – Gardner syndrome.

Peripheral fibromatosis usually forms a soft, mobile tumor connected with neighboring tissues, covered with unchanged skin. Intra- and retroperitoneal fibromatosis can reach large size and be seen or felt on digital palpation, but more often primary symptoms result from compression and infiltration of vascular structures, gastrointestinal tract or urinary tract [4].

Among picture examinations the most suitable in the assessment of localization and connection with neighboring tissues are CT and MRI, used also for check-up examination after surgical resection [5]. Final diagnosis is given on the basis of histological examination of the material from surgical biopsy, oligobiopsy or, rarely, cytological (BAC).

Treatment still poses a big challenge since presently available methods are burdened with high percentage of topical recurrence (40–60%). Typical treatment consists in resection within healthy tissues with or without adjuvant radiotherapy [2]. Due to lack of explicit treatment outlines, medical procedures are often limited to surgery, especially in abdominal localization [8]. Resection of a tumor with wide margins, frequently covering significant parts of neighboring tissues, is the most effective method of fibromatosis treatment. In case of very extensive changes it may be preceded by non-adjuvant radiotherapy or take two-stage course.

In peripheral localizations synthetic materials for reconstruction of soft tissues are used (e.g. grid to reconstruct abdominal integument).

Radiotherapy is most frequently a method of complementary treatment, but in some cases it may be basic or the only method – especially to treat tumors which can not be fully removed and when there is no consent for surgical treatment [4, 6].

Chemotherapy is used first of all in recurrences treatment or in cases with contraindications for surgical procedure and is still, similarly to hormonal treatment with the use of anti-estrogens, the subject of clinical research. Schemas based on doxorubicin, dacarbazine, carboplatin and ifosfamide are used, among hormonal drugs most reports concern tamoxifen [7]. Inhibitors of tyrosine kinase can also act in a favorable way, however research results are not explicit on this [4, 7].

CONCLUSIONS

Fibromatosis in spite of its rare occurrence constitutes a serious clinical problem. Both diagnosis and the choice of proper treatment methods may cause difficulties. Resection within wide range remains a treatment of choice, whereas the role of radiotherapy and chemotherapy together with the use of hormones is still the matter of investigation. Possible diagnosis of fibromatosis should be considered not only in cases of integument tumors in patients burdened with mutation in APC gene, but also in patients with retroperitoneal space tumor, as in the case described above.

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