

MPHTI 76.29.39

A CLINICAL CASE OF AN ECHINOCOCCAL MEDIASTINAL CYST WITH A BREAKTHROUGH IN THE AORTA

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Conflict of interest

The authors declare that they have no
conflicts of interest

Keywords

echinococcosis, mediastinum,
surgery

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Abstract

The article describes a clinical case of a breakthrough of an echinococcal mediastinal cyst in the thoracic aorta and an embolism of the femoral artery. The issues of differential diagnosis and therapeutic tactics are considered. The effectiveness of the use of minimally invasive endovascular methods is highlighted. The need for a multidisciplinary approach and subsequent anthelmintic therapy is shown.

Көкірекаралық эхинококкты кистаның кеуде аортасына жарылуының клиникалық көрінісі

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Аңдатпа

Мақалада көкірекаралық эхинококкты кистаның кеуде аортасына жарылуы және сан артериясына эмболиясының клиникалық жағдайы сипатталған. Дифференциалды диагностика және емдеу тактикасы мәселелері қарастырылған. Аз инвазивті эндоваскулярлық әдістерді қолдану тиімділігі көрсетілген. Мультидисциплинарлы қарау тәсілдерін қолдану және антигельминттік терапияның қажеттілігі қарастырылған.

Клинический случай эхинококковой кисты средостения с прорывом в аорту

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Аннотация

В статье дано описание клинического случая прорыва эхинококковой кисты средостения в грудной отдел аорты и эмболией бедренной артерии. Рассмотрены вопросы дифференциальной диагностики и лечебной тактики. Освещена эффективность применения малоинвазивных эндоваскулярных методов. Показана необходимость мультидисциплинарного подхода и последующей противогельминтной терапии.

Ключевые слова

эхинококкоз, средостение,
хирургия

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Конфликт интересов

Авторы заявляют об отсутствии
конфликта интересов

Introduction

The problem of echinococcosis, despite the progress made in the diagnosis and treatment, still remains relevant for our region. Over the past 10 years, more than 4,000 cases of human echinococcosis have been registered in Kazakhstan. There is a tendency to increase the frequency of combined echinococcosis lesions, which is associated with a decrease in the level of veterinary supervision and animal husbandry technologies [1,6]. Unusual localization of echinococcosis is rare. It is known that an echinococcal cyst can be located in any organ and tissue. The frequency of rare localities of echinococcosis ranges from 1% to 7% , and often, these patients are operated on under different diagnoses, and the presence of a cyst is established only during surgery [2,10]. Localization of an echinococcal cyst in the posterior mediastinum is very rare. This publication presents the experience of surgical treatment of a patient with mediastinal echinococcosis with a breakthrough in the thoracic aorta[12]. The individual approach in determining the treatment tactics is shown. Given the rare frequency of such cases, the description of this clinical case is useful.

Clinical case

Patient A., 44, was admitted to our center on 23.01.2020 with complaints of chest pain, shortness of breath during exercise, dry cough, fever, general weakness.

From the anamnesis: he became acutely ill when there was pain in the right lower limb. At the place of residence, after an examination by a vascular surgeon, a diagnosis was made: «Thrombosis of the femoral artery on the right». The operation was performed: Revision of the femoral artery, embolectomy from the femoral artery. Intraoperative: the cause of thrombosis was daughter echinococcal cysts. Later, due to the appearance of chest pain, hyperthermia, the patient underwent a chest CT scan, which revealed an echinococcal mediastinal cyst. Aortic aneurysm? After conducting telemedicine, given the high risk of developing a thoracic aortic rupture, the presence of a giant echinococcal cyst in the posterior mediastinum, the patient was transferred to our center by air ambulance. Upon admission to our center, the patient underwent a CT scan of the chest with vascular contrast, in which at the level of Th7-Th12 vertebrae, along the posterior-lateral wall of the aorta, the presence of an irregular formation, with a thick capsule, liquid density, heterogeneous structure, with many partitions and with a leak of contrast material from the aorta is determined

A consultation was held consisting of angiosurgeons, thoracic surgeons, interventional surgeons,

and anesthesiologists. Given the high risk of thoracotomy and echinococectomy, it was decided to perform stenting of the thoracic aorta as the first step. 31.01.2020 was performed: thoracic aortography, endovascular implantation of a stent graft in the descending thoracic aorta. 05.02.2020 after the improvement of the condition, he was dis-

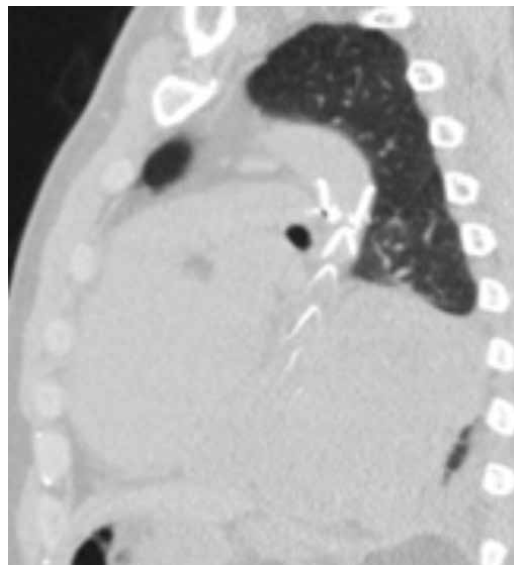
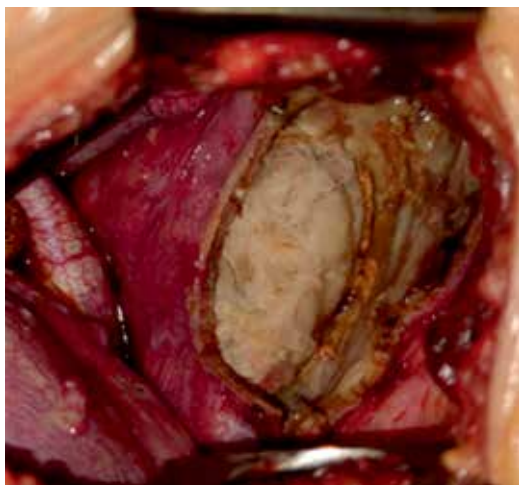
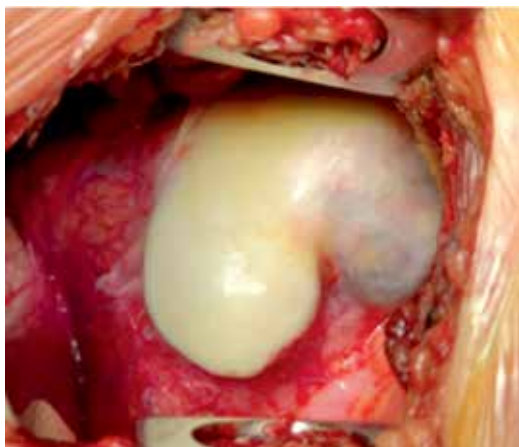


Figure 1. Computed tomography in coronary, sagittal, and axial projections

Figure 2.
Computed tomography
with contrast



Figure 3.
Intraoperative pictures of
mediastinal Echinococcus



charged for outpatient treatment at the place of residence.

In the future, as planned on 17.08.2020, the patient was hospitalized in the NSCS named after A. N. Syzganov.

Upon admission, the general condition of the patient is moderate due to the underlying disease.

Computed tomography of the chest from 02.07.2020 (Figure. 1): CT–picture of signs of an echinococcal cyst paravertebral to the left.

Computed tomography of the chest with contrast from 18.08.2020 (Figure. 2): The state after stenting of the descending thoracic aorta. Echinococcal cyst of the posterior mediastinum, in dynamics with a moderate increase in size.

On 21.08.2020, a left thoracotomy and a mediastinal echinococectomy were performed. Intraoperatively (Figure. 3): there is an echinococcal cyst in the posterior mediastinum, measuring 13.0 x 8.0 x 6.0 cm.

Over the next few days, the patient received antibacterial and symptomatic therapy. The postoperative period passed without complications. The patient was discharged in a satisfactory condition on the 6th day after the operation. In the future, the use of albendazole was recommended for the prevention of relapse.

Discussion

An analysis of the literature shows that the most frequent clinical manifestations of echinococcosis include polymorphism of symptoms, which depend on the localization of cysts, their size, rate of development, complications, and variants of combined organ damage[3]. The introduction of modern high-tech research methods, the wider use of ultrasonographic methods has led to an improvement in the diagnosis of echinococcosis in the early stages of invasion and, as a result, a wider use of conservative therapy and the use of “waiting and watching” tactics[5]. The choice of optimal management tactics should be individual and based on an analysis of the risks and benefits of a particular method, taking into account contraindications [9]. The question of the expediency of prescribing anthelmintic drugs before surgery remains debatable [7]. There are data on the effectiveness of preoperative drug therapy, but there is insufficient reliable data in the literature on the feasibility of such tactics [4,11]. Postoperative anthelmintic therapy significantly increases the effectiveness of treatment [8]. Timely administration of anthelmintic drugs practically minimizes the risk of relapse of the disease, provided that the rules of surgical intervention and removal of all identified cysts are followed [13].

Conclusions

When diagnosing echinococcosis of the thoracic cavity organs of rare localization, it is advisable to conduct a comprehensive examination. For the purpose of differential diagnosis, to clarify the exact localization of the process in the chest cavity, the size of the formation and the nature of its contents, it is necessary to conduct such diagnostic methods as CT of the chest with vascular contrast and echocardiography. Echinococcosis is asymptomatic for a long time, which makes it difficult to diagnose and causes the detection of the disease in the compli-

cation stage. The use of an integrated approach in the diagnosis of cystic formations allows not only to identify echinococcal cysts of various localization, but also to judge the presence of complications, topographical and anatomical features, the state of the surrounding organs and structures, and, ultimately, to choose the most rational treatment tactics. The application of a multidisciplinary approach using all the possibilities of new medical technologies allows you to minimize the risks of surgical interventions. All patients operated on for echinococcosis, it is advisable to conduct anthelmintic therapy.

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