HEPATOCELLULAR CARCINOMA AND ABDOMINAL AORTIC ANEURYSM: A TALE OF DIFFICULT MEDICAL DECISION

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Abstract
Evidence based medicine enables patients and doctors to make better informed decisions. The presence of reliable evidence does not ensure that better decision will be made. In some cases treatment decision should be made by a medical commission that necessarily contains a bioethics expert. We report a case of simultaneous aortic abdominal aneurysm (AAA) and hepatocarcinoma (HCC), in a 61 year-old man. The patient didn’t received chirurgical treatment for the AAA, and died from liver failure cause by the HCC. Behind this case remained the question if the doctor’s decision, without involving the patient was the right one.

Keywords: evidence based medicine, decision, hepatocellular carcinoma, abdominal aortic aneurysm, treatment.

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Introduction

The number of patients with malignancies of the digestive organs and those with arterial disease has increased along with the average life span and the changing eating habits. In 1967, the simultaneous occurrence of an aortic aneurysm and a gastrointestinal malignancy was first reported in the literature (12). Among the various types of arterial diseases, abdominal aortic aneurysm (AAA), accompanied by malignancy of the digestive organs, is the most difficult to treat. Evidence based medicine has the main role in choosing the most efficient treatment in order to save a patient’s life. If the treatment is considered futile, doctors may legally and ethically withhold or withdraw the treatment, even contrary to the patient’s wishes (2, 5). Furthermore, doctors have no obligation to even inform their patients of the existence of therapies they consider futile (6). The questions raised are: who decides on the most appropriate treatment for a patient with rare diseases and how much help can we get from the evidence based medicine? In order to find the answer to these questions, we report a case of simultaneous AAA and hepatocarcinoma, in a man with viral B infection in the past.

Case report

A 61-year-old patient with multiple cardiovascular risks (smoker, dislypidemia, high blood pressure), with a past history of acute myocardial infarction eight years before, was admitted in our department with the following symptoms: back pain followed by superior abdominal pain. Physical examination revealed an overweight, orientated, fully alert and not pale patient. The cardiovascular examination revealed normal cardiac beats, but a systolic murmur in the epigastric area corresponding to abdominal aorta, not detected one year ago during the routine examination, blood pressure of 170/90 mmHg when lying and 150/70 mmHg when sitting. His blood tests showed elevated fibrinogen 575 mg/dl, erythrocyte sedimentation rate 54 mm/1hr, hepatic cytolysis ALAT 74 U/L and ASAT 80 U/L, gamma-glutamyltransferase 240 U/l, with normal haemoglobin and other parameters. The abdominal ultrasounds and CT scan confirmed the diagnosis of abdominal aortic aneurysm below the renal arteries, near the aortic bifurcation, of 115 mm length and 84 mm diameter with a large thrombus attached to the interior wall and revealed in the same time, the presence of a large tumor mass of 56 mm in the eighth segment of the right hepatic lobe, with malignancy characters and partial portal vein thrombosis. The diagnosis of hepatocarcinoma was sustained by high levels of alpha fetoprotein (8536 ng/ml, normal values < 7ng/ml). Due to the presence of the hepatic tumor, and obvious malignancy signs, the cardiovascular surgeon refused the operation. The patient didn’t benefit from the surgical treatment of the AAA, and died from liver failure caused by the evolution of hepatocarcinoma.

Ethical particularities of the oncological disease

This case was the subject of vast discussions between the cardiologist, the cardiovascular surgeon, the gastroenterologist and the oncologist.
Finally, it was considered that the neoplastic disease reached an advanced stage of development. Although further exploration denied the existence of distant metastases, the prognosis was considered extremely bleak (estimated survival within 6 months). The patient was directed to the Oncology Clinic where he was advised into taking Nexavar (Sorafenib). This is a multikinase inhibitor with antiproliferative and antiangiogenic properties recommended for patients with kidney or liver cancer in advanced stages of development. The treatment, in addition to modest results in increasing the survival rate, is grafted by numerous side-effects, most of which have a cardiovascular impact: arterial hypertension, cardiac ischemia leading to myocardial infarction, worsening of heart failure, increased risk of bleeding by interfering with antiplatelet medication and anticoagulants. The patient also associated partial portal vein thrombosis which remains a contraindication to chemotherapy. From the beginning, the idea of such treatment in a patient with severe cardiovascular disease already gave the oncologist reasons of doubt regarding the real benefit, and ultimately made him recommend only a palliative treatment.

Ethical particularities of the cardiopathy

Abdominal aortic aneurysms (AAAs) are relatively common and potentially life threats. The patients at highest risk for AAA are men, usually smokers, older than 65 years and with peripheral atherosclerotic vascular disease. AAAs are usually asymptomatic until they expand or rupture. An expanding AAA causes sudden, severe, and constant low back, flank, abdominal, or groin pain. The syncope may be the principal symptom, however, with less prominent pain. Most clinically significant AAAs are palpable upon routine physical examination. The presence of a pulsatile abdominal mass is virtually diagnosed but found in less than half of all cases. The most common complication for untreated AAA is the rupture. Patients with a ruptured AAA may present in shock as evidenced by cyanosis, hypotension, tachycardia and peripheral hypoperfusion signs. While the pain due to rupture of an AAA may be quite dramatic, the associated physical findings may be very subtle. Some patients may have normal vital signs in the presence of a ruptured AAA, due to retroperitoneal containment of hematoma.

At least 65% of patients with ruptured AAA die from sudden cardiovascular collapse before arriving at hospital. The risk of rupture of small aneurysms (smaller than 4.0 centimetres) is lower than the risk of rupture of large aneurysms (larger than 6.0 centimetres). In addition to size, the risk of AAA rupture depends upon the rate at which the aneurysm is expanding. The evidence suggests that aneurysms expand at an average rate of 0.3 to 0.4 centimetres per year. The annual risk of rupture based upon aneurysm size is estimated as follows: less than 4.0 cm in diameter =less than 0.5 %; between 4.0 to 4.9 cm in diameter =0.5 to 5 %; between 5.0 to 5.9 cm in diameter =3 to 15%; between 6.0 to 6.9 cm in diameter =10 to 20 % between 7.0 to 7.9 cm in diameter =20 to 40 %; greater than or
equal to 8.0 cm in diameter = 30 to 50%[14]. Our patient had a large aneurysm (84/115 mm) with a high risk of rupture.

AAAs are treated by surgical repair [7]. When indicated, unruptured aneurysms can be addressed with elective surgery, while ruptured AAAs require emergent repair. The primary methods of AAA repair are as follows: Open surgery which requires direct access to the aorta through an abdominal or retroperitoneal approach or Endovascular method which involves access to the lumen of the abdominal aorta, usually via small incisions over the femoral vessels; an endograft, with a stent exoskeleton, is placed within the lumen of the AAA, extending distally into the iliac arteries. None of these methods is risk free and the final success also depends on the clinical status of the patient, especially on the associated comorbidities. Our patient had a large aneurysm (considered at high risk) with an inner thrombus that required immediate open surgery. Because of the association with a neoplastic disease in advanced stage of development, the surgeon considered the procedure as having a great risk of mortality with minimal benefits, so he refused the case.

**Discussion**

Hippocrates advised physicians to “refuse to treat those who are overmastered by their disease, realizing that in such cases medicine is powerless”. What could evidence based medicine tell us about this case? There are only few reports in the literature on the occurrence of AAA with other abdominal diseases. About 30 years ago, Szilagyi el al. (12) reported a 4% incidence of intra-abdominal malignancies found at the time of aortic reconstruction, Dimakakos et al. reported an incidence of 3.5% of AAA combined with a second intra-abdominal non-vascular disease (3). Several studies addressing this particular problem have been reported (1, 7), but none of them included patients with HCC. In patients with known colorectal cancer and an AAA of 5.5 cm or more, the treatment of the colorectal cancer at first may result in life-threatening rupture of the aneurysm. For rectal cancers and AAA, there is a consensus that the symptomatic lesions should be treated first (13, 14), and the cancer should be treated first if the AAA is less than 5 cm. Our patient had a hepatocarcinoma beyond resectability limit and an AAA exceeding 5.5 cm, complicated by thrombosis. The rare cases presented in literature sustained the idea that we should apply the treatment that is life saving for the patient, but did not specify the post-operative mortality rate and life quality. However, the presence of reliable evidence does not ensure that better decision will be made. Claims that evidence based medicine offers an improved method of decision making (11) are difficult to evaluate in patients with rare diseases, because practice is poorly defined. Medicine has long been noted as a profession that combines the best knowledge available with an appreciation of a good “bedside manner”. The treatment decision is made on personal experience, technical skills, and medical proofs. The advocates of evidence based medicine recognize that it does not provide answers to all problems (12), because each patient is unique, and each disease has its own scenario. Lifesaving decisions are not
easy to be made. In our case the decision of not applying any surgical treatment should be made after the case was debated in front of a commission, that necessarily contains a bioethics expert. The medicine advances and concept of futility will became less applicable, and the therapeutic decision, in some cases, should include the physician, family and bioethics expert, having the certainty of an extremely difficult mission for all those involved.

According the Convention concerning the Human Rights and Biomedicine (The Oviedo Convention)(4) the patient has the right of final decision, no matter of his clinical condition. This necessarily implies the prior informing of the patient regarding the disease and its consequences, the existing therapeutic methods and also the subsequent risks involved by some radical therapies.

The current approach supports the idea of telling the entire truth to the patient, because no matter the gravity of disease from which he suffers, and the vital risk, the patient the right to decide upon his life.

The communication between the doctor and the patient plays and essential part and implies, the extraordinary ability of the doctor to communicate a bad result, on the one hand, and the knowledge of the psychological profile of each patient in order to forecast a certain reaction, on the other hand. From this point of view, an eventual collaboration with a psychologist shouldn't be neglected.

The quick approach and informing about a diagnosis have a negative impact on the patient like the responsibility transfer to another doctor or department.

An open discussion with the patient, the way of telling the truth about the disease, the empathy regarding his suffering and the capacity to give the patient the idea that he is not abandoned in his pain, will gain the patient's trust in the doctor, in the medical act, raising his compliance.

In this case the patient associated two severe diseases, both of them having a bad prognosis. Medically, the surgery for repairing the aortic aneurysm should not be influenced by the presence of hepatocarcinoma, even if the latter shortens the patient's life. The patient must be the one who has the right to decide upon having the surgery, after being previously informed about the actual therapeutic possibilities as well as about the subsequent risks. The doctor should not encourage a paternalist relationship with the patient (8,9), but he must support him by offering complete information about the diseases. The psychological impact of the disease and the lack of information from the doctors, often make patients vulnerable (9), a fact which negatively influences their decisions. So, in the doctor-patient relationship, the role of the doctor should not be strictly for information purposes but it should also include an empathic interactions with the patient, in order to better explain the risks, the benefits and to promote the patient's interests, and, eventually, to respect his decision made in full knowledge of cause.(8)

Usually, in Romania the patient's attitude towards oncological diseases is one of resignation. The battle against cancer is seen from the beginning as lost.(5) This fact generally determines doctor to choose a paternalist relationship with the patient having the general tendency to not tell the
diagnosis. This type of relationship breaches the patient’s rights to autonomy and information. (8). As long as the patient is mentally healthy, he must be correctly informed, in order to play the main role in making future decisions. If the treatments for oncological diseases have evolved substantially in recent years, the patients must be correctly informed about their diseases in order to make the right therapeutic decision and raise the patient’s hope and quality of life.

Since Hypocrates who supported a paternalist relationship between doctors and patients, and where the doctor was “deciding and choosing” for the patient, today the decision belongs to the ill person, after a correct prior information by the doctor.

Conclusions
The doctor must be in the service of the patient, by providing him with clear and as relevant as possible pieces of information regarding his disease, designed to help him make the best therapeutic decision. (8,9, 15). The final objective is that by a professional medical act and a correct and realistic presentation of the clinical situation, to promote the well-being of the patient and this cannot be accomplished unless the patient's informed decision and autonomy are respected.

References
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