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Case Report / Приказ случаја

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Spontaneous splenic rupture in infectious mononucleosis

Спонтана руптура слезине после инфективне мононуклеозе

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SUMMARY

Introduction Spontaneous splenic rupture is a rare but potentially fatal complication of infectious mononucleosis (IM). It occurs in only 0.1–0.5% cases of this disease.

The aim of this paper was to present a case with spontaneus splenic rupture after IM.

Case Outline: 22-year old female patient, one month after she was treated for infectious mononucleosis, she was feeling better, and started training volleyball. Two weeks after starting the training, she felt severe abdominal pain. The diagnosis of rupture was confirmed with computer tomography. Splenectomy was successfully performed. Postoperative course was good and patient was recovered with no need for blood transfusion.

Conclusion: The timely diagnosis and setting indications for surgical treatment are crucial in healing. Patients should wait to start with sport activities at least two months if size of the spleen is within normal range.

Keywords: infectious mononucleosis, complications; rupture, spontaneus; splenic rupture, etiology, surgery; splenectomy

САЖЕТАК

Увод Спонтана руптура слезине је ретка, али потенцијално фатална компликација инфективне мононуклеозе (ИМ). Јавља се само у 0,1–0,5% случајева ове болести.

Циљ овог рада је био да приже болесницу са спнтаном руптуром слезине после ИМ.

Приказ болесника Болесница стара 22 године, месец дана после лечења ИМ осећала се добро и почела је да тренира одбојку. Две недеље после почетка тренирања, у току тренинга осетила је јаке болове у трбуху. Дијагноза спонтане руптуре слезине потврђена је компјутеризованом томографијом. Урађена је спленектомија, а постоперативни ток је био повољан и она се опоравила без трансфузија.

Закључак Правовремена дијагноза и постављање индикације за оперативним лечењем од пресудног су значаја за излечење. Са спотским активностима се може отпочети два месеца после лечења ИМ уколико је величина слезине нормална.

Кључне речи: инфективна мононуклеоза, компликације; спонтана руптура; руптура слезине, етиологија, хирургија; спленектомија

INTRODUCTION

Infectious mononucleosis is a common viral illness caused by an infection with Epstein Barr virus and it is manifested with fever, sore throat, fatigue and lymphadenopathy [1]. Complications are rare including splenic rupture with an incidence between 0.06-0.5% [2]. Splenic rupture is considered as the most dangerous complication that may lead to fatal outcome, first described by Rokitansky in 1861 [1]. Symptoms of splenic rupture include abdominal pain, syncope and rapid drop in blood pressure while diagnosis is mostly established with ultrasonographic or computer tomography abdominal imaging [3]. Recommended treatment for splenic rupture is splenectomy in order to avoid sudden death [4].

CASE REPORT

A 22-year old girl previously diagnosed with infectious mononucleosis presented herself to the Emergency Department of Clinical Center of Serbia, as an emergency case due to severe abdominal pain. Six weeks before that she had presented herself to the hospital, where she had been diagnosed with infectious mononucleosis. Diagnose was set by history, clinical exam and elevated levels of IgM and IgG antibodies against Epstein-Barr's virus. Abdominal ultrasound revealed enlarged liver and spleen; axial diameter of spleen was 14.2 cm. After a month of treating, she was feeling better, and started training volleyball. Two weeks after starting the training, she felt severe abdominal pain and

presented herself to the Emergency Department of Clinical Center of Serbia. The pain started suddenly, while the patient was playing volleyball, and was accompanied by malaise, dizziness and generalized weakness. The patient had pale skin and visible mucous membranes, covered with cold sweat. The patient was alert and orientated but hemodynamically unstable with a heart rate of 122 and low blood pressure (90/50 mmHg. Blood test results discovered low hemoglobin level (93 g/L), leukocytosis (17 x 10^9/L) and a low level of red blood cells (3.28 x 10^{12}/L). On examination, her abdomen was firm on palpation very sensitive and painful, especially in the left upper quadrant. The diagnosis was confirmed with computer tomography abdominal imaging. Computer tomography scan showed spleen enlargement and fluid (diameter 14 x 7 cm) (Figure 1–3). The presence of free fluid was noticed intraintestinal and paracolic left. CT morphology of liver, kidneys and pancreas was normal. As intensive reanimation therapy did not help, because the heart rate was still accelerated in spite of reanimation therapy, it was decided that patient should undergo a surgery. After opening the abdominal cavity and evacuating 800 ml of haemoperitoneum, splenectomy was performed since that cleft on the upper pole of spleen could not be surgically repaired. After splenectomy and revising the abdominal cavity for hemostasis, abundant lavage was performed and drains were placed on the left subphrenic space, prior to the closure of the abdominal wall. Postoperative course was good and patient was recovering with no need for blood transfusion. Drains were removed at the optimum time and on the day 6the patient received vaccination against pneumococcus, meningococcus and Haemophilius influenzae. On the day 7, the patient was discharged home in good general condition with written information about post splenectomy risks and up-to-date vaccination card.

Figure 1. CT of enlarged spleen and free abdominal fluid.

Figure 2. Intraoperative finding of cleft on upper splenic pole.

Figure 3. Macroscopic view of removed enlarged spleen.

DISCUSSION

Complications of infectious mononucleosis could be serious and fatal and splenic rupture is considered the most frequent cause of death in infectious mononucleosis [4]. Unfortunately, mortality rate is relatively high when rupture occurs (approximately 30%) [5]. Detailed mechanism of splenic rupture remains unclear. Some authors consider increase in portal venous pressure and sudden compression of the enlarged spleen due to diaphragm contraction the most frequent factor that may cause spontaneous splenic rupture [6], while Patel et al. consider the expanding of subcapsular haematoma the most important factor that causes splenic rupture in infectious mononucleosis [7]. As

our patient started feeling severe pain while she was playing volleyball, the most likely cause of the splenic rupture is sudden compression of the enlarged spleen. Splenic rupture, especially when patient is hemodynamically unstable, should be treated by splenectomy [1], while some authors recommend transcatheter arterial embolization [8]. We have treated our patient by splenectomy after a surgical consultation, in order to prevent sudden death. Repair was considered, but it was not possible to perform, due to spleen enlargement and high risk of bleeding. Patient was vaccinated against pneumococcus, meningococcus and Haemophilius influenzae, as vaccination against these pathogens should be conducted after the splenectomy [9]. Survival rate for patients who undergo splenectomy is high and it is close to 100%, therefore the survival benefit from splenectomy outweighs post splenectomy risks, since mortality rate in vaccinated patients is very low [10]. While this case concludes with the etiology of splenic rupture remaining unclear in infectious mononucleosis, this report has important implications for clinicians of emergency, intensive care, general surgery, hematology as well as the infectious disease medicine. The spleen is most vulnerable to rupture in the second and third week after the onset of infectious mononucleosis [4].

This report illustrates that splenic rupture may develop sixth weeks after the onset of infectious mononucleosis, which has been rarely described in medical literature up to now. Also, the report shows that we need better monitoring of patients with infectious mononucleosis and according to that, attending physicians may have to improve surveillance and treatment plans. It is necessary to warn patients to wait with sports activities for a long time after treating infectious mononucleosis, considering that the risk of spleen rupture obviously exists a couple of week after treating the disease. Patients should wait to start with sport activities at least two months if size of spleen is within normal range.

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