Insuficijencija lijevostrane srčane potporne crpke uzrokovana trombozom – prikaz slučaja

Left ventricular mechanical support insufficiency caused by pump thrombosis – case report

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KLJUČNE RIJEČI: mehanička cirkulatorna potpora, tromboza, tromboliza, zamjena crpke.

KEYWORDS: mechanical circulatory support, thrombosis, thrombolysis, pump exchange.

CITATION: Cardiol Croat. 2014;9(9-10):439.

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CILJ: Srčane crpke predstavljaju sve češći način liječenja uznapredovalog srčanog zatajenja zbog čega su i komplikacije takvog liječenja učestaliye. Prikazujemo slučaj bolesnika s ugrađenom crpkom koji je razvio trombozu uređaja te je u konačnici zahtijevao zamjenu istog.

PRIKAZ SLUČAJA: 55-godišnjem muškarcu 17. travnja 2014. godine zbog kroničnog popuštanja srca uslijed dilatacijske kardiomiopatije ugrađena je mehanička potpora lijeve klijetke (LVAD – HeartMate II). Nakon ugradnje ehokardiografski je opisana uredna funkcija crpke te je bolesnik otpušten kući dobrog općeg stanja. Nakon tjedan dana bolesnik razvija zaduhu pri blagom tjelesnom naporu, a potom uočava tamno obojen urin. Uz navedeno oglašio se i alarm za signalizaciju niskog protoka crpke, a bolesnik u navedenom periodu nije bio adekvatno antikoaguliran (INR <1.5). Inicijalnom laboratorijskom obradom utvrdi se porast vrijednosti parametara hemolize, a ultrazvučno se objektivizira izostanak adekvatnog volumnog odtjecanja lijeve klijetke povišenjem brzine okretaja crpke (pozitivan „ramp“ test). 6-minutnim testom hoda potvrđeno je pogoršanje funkcijskog kapaciteta, a učinjena je i MSCT angiografija kojom se isključio postojanje radiološki vidljive tromboze te se zaključio kako je u bolesnika riječ o trombozi unutar LVAD-a. Započne se s infuzijom nefrakcioniranog heparina, a ponovljeni „ramp“ test bio je također pozitivan. Tada se provede tromboliza uporabom alteplaze, ali također s neuspješnim rezultatom. U konačnici se u dogovoru s kardijalnim kirurzima indicira zamjena crpke što je uspješno učinjeno 7. lipnja. U kontrolnom ehokardiografskom nalazu kao i kontrolom crpke utvrdi se uredna funkcija VAD-a, a 6-minutnim testom hoda potvrdi se poboljšanje funkcijskog kapaciteta.

ZAKLJUČAK: Primjena nefrakcioniranog heparina uz trombolizu predstavlja optimalan inicijalni način liječenja tromboze LVAD-a, dok je zamjena uređaja konačna terapija u slučaju neuspjeha prethodno navedene.

AIM: Mechanical circulatory support (MCS) has become frequently used modality of advanced heart failure treatment resulting in increased rate of complications. We report a case of a patient with MCS who developed pump thrombosis which ultimately required device exchange.

CASE REPORT: 55-year-old man with dilated cardiomyopathy was implanted with left ventricular assist device (LVAD – Heartmate II) on 17th April 2014 due to chronic heart failure. Normal function of the device was verified using echocardiographic exam and the patient was discharged in good clinical status. A week after he developed dyspnoea on minimal physical exertion and noticed dark urine. He also reported "low flow" alarm on the pump controller, and admitted poor coagulation control (INR <1.5). Using initial laboratory workup we determined elevated values of hemolysis parameters. Absence of left ventricle volume unloading after pump speed increase was confirmed using echocardiographic exam (positive "ramp test") and functional capacity deterioration was verified using 6-minute walk test. MSCT angiographic scan ruled out any signs of radiologically evident thrombosis, therefore, diagnosis of inside-VAD thrombosis was postulated. Unfractionated heparin infusion was started and repeated ramp test was still positive. Afterwards, thrombolytic agent (alteplase) was administered but also with no success. Ultimately, the indication for pump exchange was placed and the procedure was successfully performed on 7th July. Finally, normal LVAD function was reported and the improvement in 6-minute walk test was verified.

CONCLUSION: Unfractionated heparin in conjunction with thrombolysis represents optimal initial method of LVAD thrombosis treatment, while pump exchange constitutes for ultimate therapy modality in the case of therapeutic failure of the latter.

LITERATURE

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RECEIVED:
September 30, 2014