Doprinos orijentacijskog ultrazvuka srca u dva bolesnika s akutnim zatajivanjem jetre – prikazi slučajeva

Contribution of focused cardiac ultrasound in two patients with acute liver failure – case reports

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Uvod: Orijentacijski pregled srca ultrazvukom (FoCUS) je pojednostavljena metoda pregleda srca ultrazvukom bazirana na vizualnom dojmu¹. Za razliku od detaljne standardne ehokardiografije FoCUS se može koristiti nakon relativno kratkog učenja i zahtijeva znatno manje vremena za pregled. FoCUS kao dodatak kliničkom pregledu može dati vrijedne podatke za bolje razumijevanje patofiziološkog stanja u bolesnika. Kongestija jetre uslijed srčanog popuštanja može dovesti do zatajivanja jetrene funkcije. Znakovi kongestije i poremećaj funkcije srca mogu se prepoznati pomoću FoCUS.

Prikaz slučajeva: *Slučaj 1:* Muškarac star 54 godine premješten je iz Odjela gastroenterologije u Jedinicu intenzivne skrbi zbog pogoršanja općeg stanja s encefalopatijom i oligurijom, bez podataka o ranijoj bolesti srca i jetre. Uzimao je duloksetin radi depresije. Uzimanje duloksetina povezano je s rizikom nastajanja jetrene lezije². Koncentracija laktata u krvi bila je 8,4 mmol/L, bilirubin 86 mmol/L, INR > 6,0, AST 9302 U/L, ALT 6549 U/L. FoCUS učinjen od strane stažista koji je nedavno pohađao USLS-BL1 tečaj, ukazao je na proširenje donje šuplje vene, proširene jetrenih vena te značajno uvećane srčanih komora reducirane sistoličke funkcije. Transezofagusnom ehokardiografijom prikazana je biventrikulska nekompakcijska kardiomiopatija³. Ejekcijska frakcija (EF) je bila 20%. Uz liječenje srčanog zatajivanja i prekid uzimanja duloksetina, jetrena funkcija i stanje svijesti su se popravili. Premješten je u Kliniku za kardiologiju radi daljnjeg praćenja i liječenja. *Slučaj 2:* Muškarac star 44 godine premješten je u Jedinicu intenzivne skrbi radi akutnog zatajivanja jetre. Razina laktata bila je 12,1 mmol/L, bilirubin 69 umol/L, INR 2,79, AST 1648 U/L, ALT 1996 U/L. Prethodno liječen u drugoj ustanovi zbog plućnih infiltrata. U iskašljaju je nađen *Mycobacterium bacillus* te je započeta antituberkulotska terapija. Tada učinjenim ehokardiografskim pregledom ustanovljen je bikuspidni aortni zalistak i EF lijeve klijetke od 40%. FoCUS ukazuje na proširenje donje šuplje vene i jetrenih vena te uvećane srčanih šupljina uz smanjenu kontraktilnost miokarda. Ehokardiografijom se nalazi teška aortalna stenoza i značajno uvećanje srčanih komora uz EF od 20%. Uz liječenje

Introduction: Focused cardiac ultrasound (FoCUS) is a simplified application of echocardiography mainly based on visual impression¹. Unlike comprehensive standard echocardiography, FoCUS can be successfully performed after rather short training and in much less examination time. By adding FoCUS to physical examination physician can achieve additional information for better understanding of patient's pathophysiology. Liver congestion due to weak heart may be the cause of liver failure. Liver congestion and impaired heart function can be detected by FoCUS.

Case reports: *Case 1:* 54-year-old male was transferred from Gastroenterology Ward to Intensive Care Unit (ICU) due to general clinical worsening with encephalopathy and oliguria. No liver or heart problems were known from the history. He has been taking duloxetine for depression. Duloxetine is known as an agent with potential risk for liver lesion². Laboratory workup revealed lactate 8.4 mmol/L, bilirubin 86 mmol/L, INR > 6.0, AST 9302 U/L, ALT 6549 U/L. FoCUS performed by an intern, who recently attended Ultrasound Life Support Basic Level (USLS-BL1) course, demonstrated dilated inferior vena cava and hepatic veins as well as significant heart enlargement with reduced left ventricular systolic function. Transoesophageal echocardiography showed biventricular non-compaction cardiomyopathy³. Left ventricle ejection fraction was 20%. By treating congestive heart failure and stopping duloxetine, liver function and mental state improved. The patient was transferred to Cardiology Clinic for follow-up and treatment. *Case 2:* 44-year-old male was transferred to ICU due to acute liver failure. Lactate was 12.1 mmol/L, bilirubin 69 umol/L, INR 2.79, AST 1648 U/L, ALT 1996 U/L. Three months before, he was hospitalized in another institution due to bilateral lung infiltrates. When the analysis of sputum demonstrated *Mycobacterium bacillus*, antituberculous therapy was started. Bicuspid aortic valve and left ventricle EF of 40% were found on echocardiography. Again dilated inferior vena cava and hepatic veins as well as significant heart enlargement with reduced systolic function were found by FoCUS. Hence, echocardiography was

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zatajivanja srca i prekid terapije antituberkuloticima, dolazi do oporavka jetrene funkcije. Nekoliko tjedana kasnije učinjena je zamjena aortnog zaliska.

Zaključak: U slučaju ova dva bolesnika orijentacijskim ultrazvukom, učinjenim od strane stažista, ustanovljena je kongestija jetre uslijed slabosti srca kao značajan nalaz koji je pridonio razumijevanju stanja bolesnika, uputio na daljnje pretrage i postupke liječenja. Potrebno je educirati mlade liječnike, stažiste i studente medicine da prihvate i nauče se služiti orijentacijskim ultrazvukom kao kliničkim pomagalom pri pregledu bolesnika.

performed and showed severe aortic stenosis and left ventricle EF of 20%. After treating congestive heart failure and discontinuing antituberculous liver function improved. Few weeks later he underwent aortic valve replacement.

Conclusion: In these two cases liver congestion due to heart failure was recognized by FoCUS performed by an intern, and was as a significant contributing causative factor which influenced on further diagnostic process and treatment. Young physicians, interns and medical students should be encouraged to access the ultrasound training to accept ultrasound as a precious tool in routine patient examination.

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