

BAKI NOKTASINDA VENA KAVA İNFERİOR ACİL USG

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Teknik: Baki için supin pozisyon tercih edilir.

Düşük frekanslı 3.5-5 MHz, konveks abdominal prob ya da faz dizilimli prob tercih edilir (Resim 1).



▲ Resim 1: Düşük frekanslı konveks prob.

- i. Hastanın kimlik ve dosya bilgileri hastane kayıt sistemine kayıt edilir.
- ii. Hasta supin pozisyona getirilir.
- iii. **Longitudinal kesitte görünüm:**
 - Görüntülemeye prob ksifoid inferiorunda (subksifoid pencere) ve transvers pozisyondayken, prob belirteci hastanın sağını (saat 09:00 hizasını) gösterirken başlanır.
 - Subksifoid pencerede kalp görüntülendikten sonra prob 90° derece döndürülür.

- vi. Kardiyak tamponad, aort stenozu ve mitral regürjitasyonda da intravasküler volum yüklenmesi durumlarına benzer şekilde genişlemiş VKİ görülebilir.

Kaynaklar

1. Goldflam K., Saul T., Lewiss R. Focus On: Inferior Vena Cava Ultrasound. American College of Emergency Physicians. Erişim: <http://www.acep.org/Content.aspx?id=80791>. Erişim Tarihi: 08.12.2014.
2. Reardon R.F., Joing S.A. Cardiac. In: Emergency Ultrasound. Ma O.J., Mater J.R., Blaivas M.(Ed.) Second Edition. China, The McGraw-Hill Companies, 2008. p: 109-148.
3. Ahn J. Inferior Vena Cava Ultrasound. In: Core Content of Clinical Ultrasonography Fellowship Training. American College of Emergency Physicians. Erişim: <https://www.acep.org/workarea/downloadasset.aspx?id=95794>. Erişim Tarihi: 28.11.2014.
4. Chen L., Hsiao A., Langhan M., Riera A. And et al. Use of bedside ultrasound to assess degree of dehydration in children with gastroenteritis. Acad Emerg Med 2010; 17: 1042-1047.
5. Levin A.C., Shah S.P., Umulisa I., Munyaneza R.B. and et al. Ultrasound assessment of severe dehydration in children with diarrhea and vomiting. Acad Emerg Med 2010; 17: 1035-41.
6. Schefold J.C., Storm C., Bercker S., Pschowski R., Oppert M., Krüger A., Hasper D. Inferior vena cava diameter correlates with invasive hemodynamic measures in mechanically ventilated intensive care unit patients with sepsis. The Journal of Emergency Medicine 2010; 38: 632-637.
7. Feissel M., Michard F., Faller J.P, Teboul J.L. The respiratory variation in inferior vena cava diameter as a guide to fluid therapy. Intensive Care Medicine 2004; 30: 1834-1837.
8. Lyon M., Blavias M., Brannam L. Sonographic measurement of the inferior vena cava as a marker of blood loss. Am J Emerg Med 2005; 23: 45-50.
9. Yanagawa Y., Nishi K., Sakamoto T., Okada Y. Early diagnosis of hypovolemic shock by sonographic measurement of inferior vena cava in trauma patients. J Trauma 2005; 58: 825-829.
10. Blehar D.J., Dickman E., Gaspari R. Identification of congestive heart failure via respiratory variation of inferior vena cava diameter. The American Journal of Emergency Medicine 2009; 27: 71-75.
11. Agarwal R., Bouldin J.M., Light R.P., Garg A. Inferior vena cava diameter and left atrial diameter measure volume but not dry weight. Clin J Am Soc Nephrol 2011; 6: 1066-72.
12. Basso F., Manani S.M., Cruz D.N., Teixeira C., Brendolan A., Nalesso F., Zanello M., Ronco C. Comparison and reproducibility to techniques for fluid status assessment in chronic hemodialysis patients. Cardiorenal Med 2013; 3: 104-112.

13. Talaq F.A, Noble V.E. Inferior vena cava, aorta assessment. In: Pediatric Emergency Critical Care and Ultrasound. Doniger S.J. (edt). First edition. United Kingdom, Cambridge University Press, 2014. p: 86-96.
14. Seif D., Perera P., Maillhot T., Riley D. And et al. Bedside ultrasound in resuscitation and the rapid ultrasound in shock protocol. *Critical Care Research and Practice* 2012; 1-14.
15. Kosiak W, Swieton D, Piskunowicz M. Sonographic inferior vena cava/aorta diameter index, a new approach to the body fluid status assessment in children and young adults in emergency ultrasound preliminary study. *Acad. J. Emerg. Med.* 2008; 26: 320-325.
16. Barbier C., Loubières Y, Schmit C, Hayon J and et al. Respiratory changes in inferior vena cava diameter are helpful in predicting fluid responsiveness in ventilated septic patients. *Intensive Care Med* 2004; 30: 1740-1746.
17. Wallace D.J., Allison M., Stone M.B. Inferior vena cava percentage collapse during respiration is affected by the sampling location: an ultrasound study in healthy volunteers. *Academic Emergency Medicine* 2010; 17: 96-99.
18. Kircher B.J., Himelman R.B., Schiller N.B. Noninvasive estimation of right atrial pressure from the inspiratory collapse of the inferior vena cava. *Am J Cardiol* 1990; 66: 493-496.
19. Nagdev A.D., Merchant R.C., Tirado-Gonzalez A., Sisson C.A. and et al. Emergency department bedside ultrasonographic measurement of the caval index for noninvasive determination of low central venous pressure. *Ann Emerg Med.* 2010; 55: 290-295.
20. Stawicki S., Adkins E.J., Eiferman D.S., Evans D.C. and et al. Prospective evaluation of intravascular volume status in critically ill patients: Does inferior vena cava collapsibility correlate with central venous pressure? *Journal of Trauma and Acute Care Surgery* 2014; 76: 956-964.
21. Zhang Z., Xu X., Ye S., Xu L. Ultrasonographic measurement of the respiratory variation in the inferior vena cava diameter is predictive of fluid responsiveness in critically ill patients: systematic review and meta-analysis. *Ultrasound in Med. & Biol* 2014; 40: 845-853.
22. Dipti A., Soucy Z., Surana A., Chandra S. Role of inferior vena cava diameter in assessment of volume status: a meta-analysis. *The American Journal of Emergency Medicine*: 30; 1414-1419.
23. Ng L., Khine H., Taragin B.H., Avner J.R., Ushay M. And et al. Does bedside sonographic measurement of the inferior vena cava diameter correlate with central venous pressure in the assessment of intravascular volume in children? *Pediatr Emerg Care.* 2013; 29: 337-41.
24. Marik P.E., Baram M., Vahid B. Does central venous pressure predict fluid responsiveness? A systematic review of the literature and the tale of seven mares. *CHEST* 2008; 134: 172-178.
25. Corl K., Napoli A.M., Gardiner F. Bedside sonographic measurement of the inferior vena cava caval index is a poor predictor of fluid responsiveness in emergency department patients. *Emerg Med Australas* 2012; 24: 534-539.