ACİLDE GİRİŞİMSEL İŞLEMLERDE USG KULLANIMI

DOÇ. DR. SADIK GİRİŞGİN

SELÇUK ÜNİVERSİTESİ

MERAM TIP FAKÜLTESİ ACİL TIP AD

Ultrasonografi (USG)

- Portabl
- Ucuz,
- Kolay ulaşılır,
- Radyasyon içermez,
- Sık tekrarlanabilir
- Probe çeşitliliği
- Knoboloji
- düşük maliyetli, ……

TARİHÇE

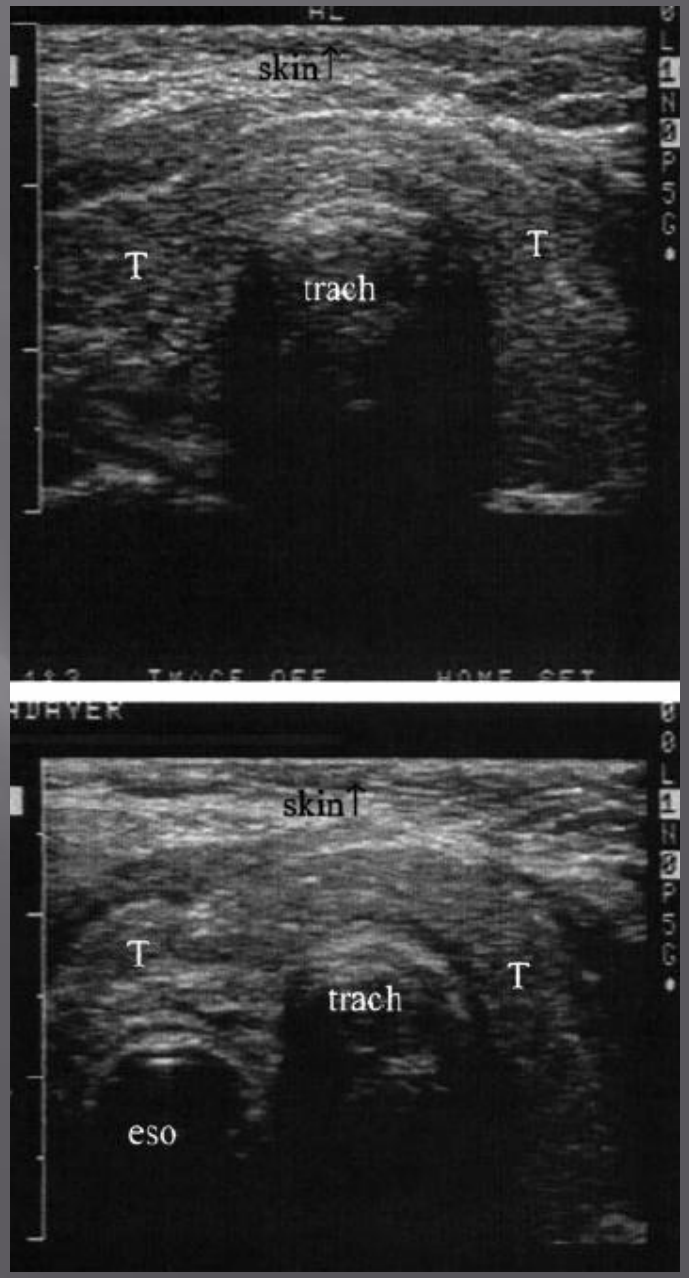

1971
1988
1990 …
2001
2008
FAST
İLK VAKA SUNUMU
İLK MAKALE
İLK ACEP KURSU
MÜFREDAT MODELLERİ
ACEP KLAVUZU
ACEP KLAVUZU

Procedural

- Intravenous lines
  - Internal jugular
  - Femoral
  - Deep brachial
- Paracentesis
- Thoracentesis
- …….

Entübasyon esnasında…

- Trakeaya bakmak



Pilot Study to Evaluate the Accuracy of Ultrasonography in Confirming Endotracheal Tube Placement

Ira L. Werner, MD, RDMS
les E. Smith, MD
ica R. Goldstein, MD
ert A. Jones, DO, RDMS
K. Cydulka, MD, MS

From the Department of Emergency Medicine, MetroHealth Medical Center/Cleve
Foundation (Werner, Goldstein, Jones, Cydulka), and the Department of Anesthes
Medical Center (Smith), Cleveland, OH.

Study objective: Visualization of the vocal cords and end-tidal capnography are the usual star
in confirming endotracheal tube placement. Vocal cord visualization is, however, not always p
and capnography is not 100% reliable and requires ventilation of the lungs to confirm placem
goal of this study is to determine the accuracy of ultrasonography for detecting endotracheal
placement into the trachea and esophagus in real time.

Methods: This was a prospective, randomized, controlled study. Eligible patients were adults
undergoing elective surgery requiring intubation. Exclusion criteria were a history of difficult
intubation, abnormal airway anatomy, aspiration risk factors, and esophageal disease. Thirty-t
patients were enrolled. After induction of anesthesia and neuromuscular blockade, the
anesthesiologist placed the endotracheal tube in the trachea and esophagus in random order
with direct laryngoscopy. During the intubations, a high-frequency, linear transducer was place
transversely on the neck at the suprasternal notch. Two emergency physicians, blinded to the

Trakea 14/14

Özafagus 19/19

Entübasyon sonrasında…

- Akciğere bakmak

Confirmation of Endotracheal Tube Placement after Intubation Using the Ultrasound Sliding Lung Sign

Blake Weaver, DO, Matthew Lyon, MD, RDMS, Michael Blaivas, MD, RDMS

Abstract

Objectives: To evaluate the performance of the ultrasound (US) *sliding lung sign* as a predictor of endotracheal tube (ETT) placement. Many other tools and examination findings have been used to confirm ETT placement; erroneous placement of the ETT has even been confirmed by US.

Methods: This was a laboratory study using fresh, recently dead cadavers. Cadavers were obtained at a medical school anatomy laboratory on the basis of availability during a four-month period. Subjects who died from significant trauma or after thoracic surgery were excluded. A numerical randomization tool was used to direct where the tube would be placed on intubation. Laryngoscopy was performed, and

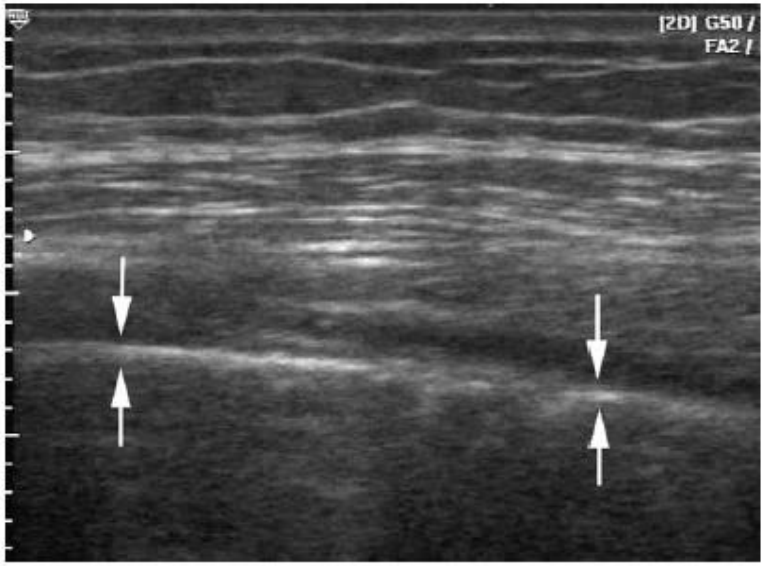
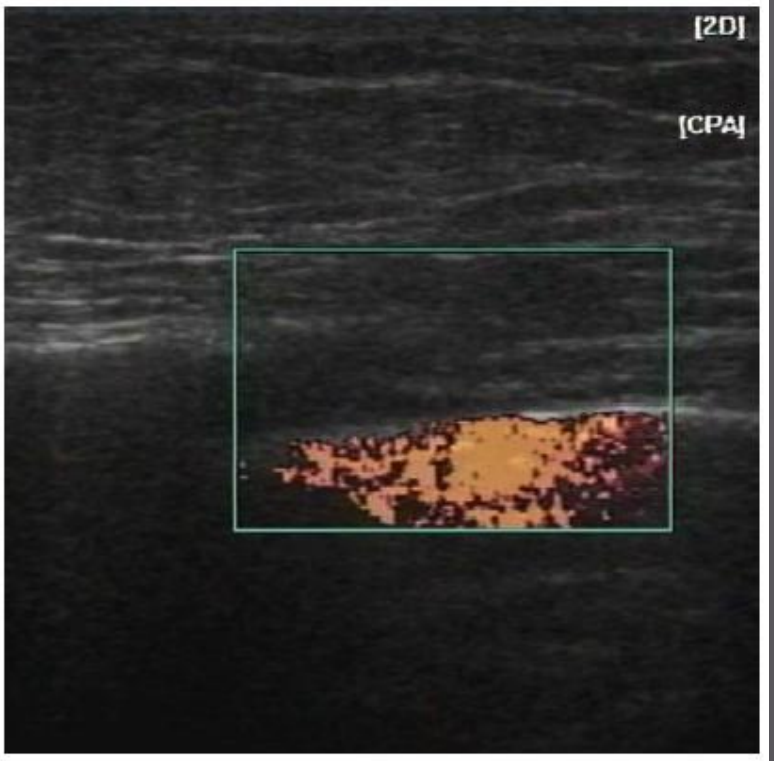
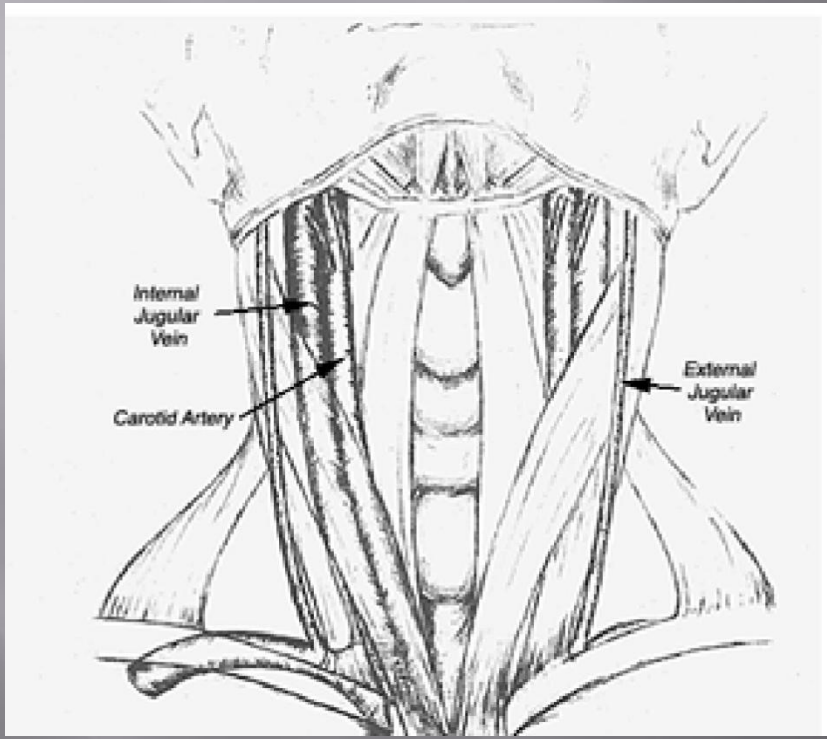


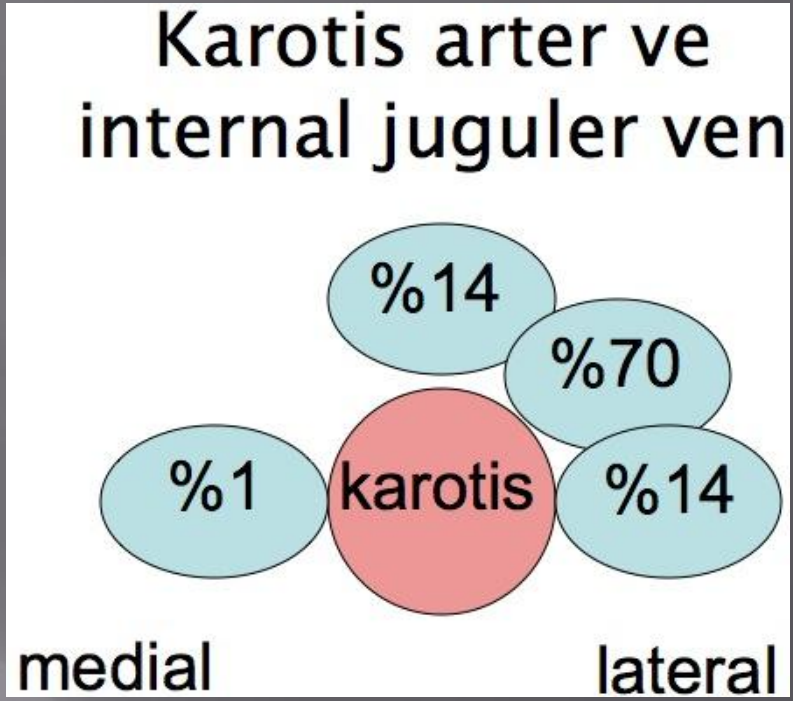
Figure 2. The bright interfaces of the parietal and visceral pleura are seen (arrows).

presence on both sides of the chest was assumed to sig-



Santral venöz kateter takılırken USG



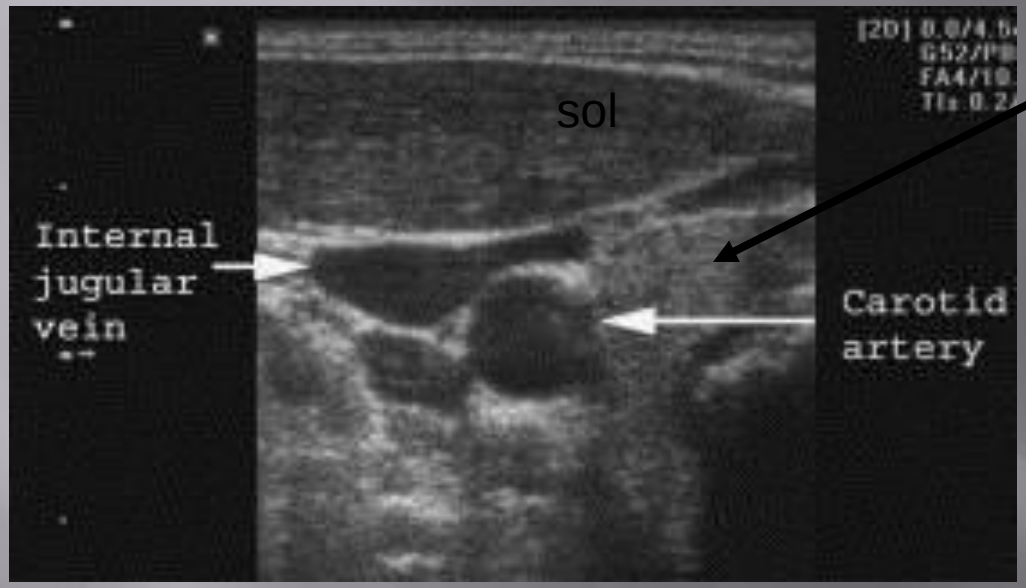


Study	Two dimensional ultrasonography (n/N)	Landmark method (n/N)	Relative risk (95% CI random)
Failed catheter placement (adults, internal jugular vein)			
Mallory et al 1990[w9]	0/12	6/17	
Nadig et al 1998[w10]	0/36	13/37	
Slama et al 1997[w11]	0/37	10/42	
Soyer et al 1993[w12]	0/24	5/23	
Sulek et al 2000[w13]	3/60	5/60	
Teichgräber et al 1997[w14]	2/50	26/50	
Troianos et al 1991[w15]	0/77	3/83	
Total (95% CI)	5/296	68/312	

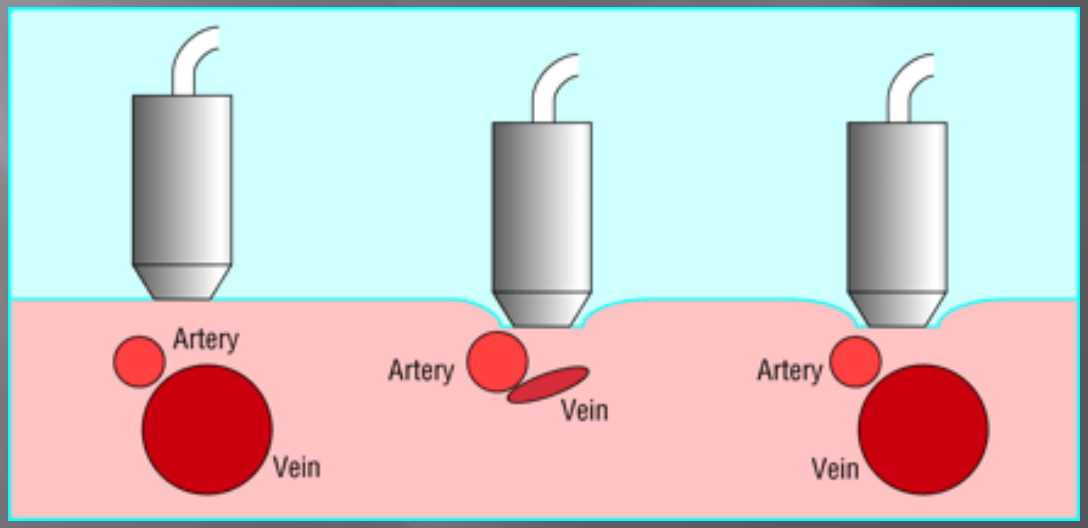
Test for heterogeneity: χ^2=6.86, df=6, P=0.33

USG ile komplikasyon riski daha az

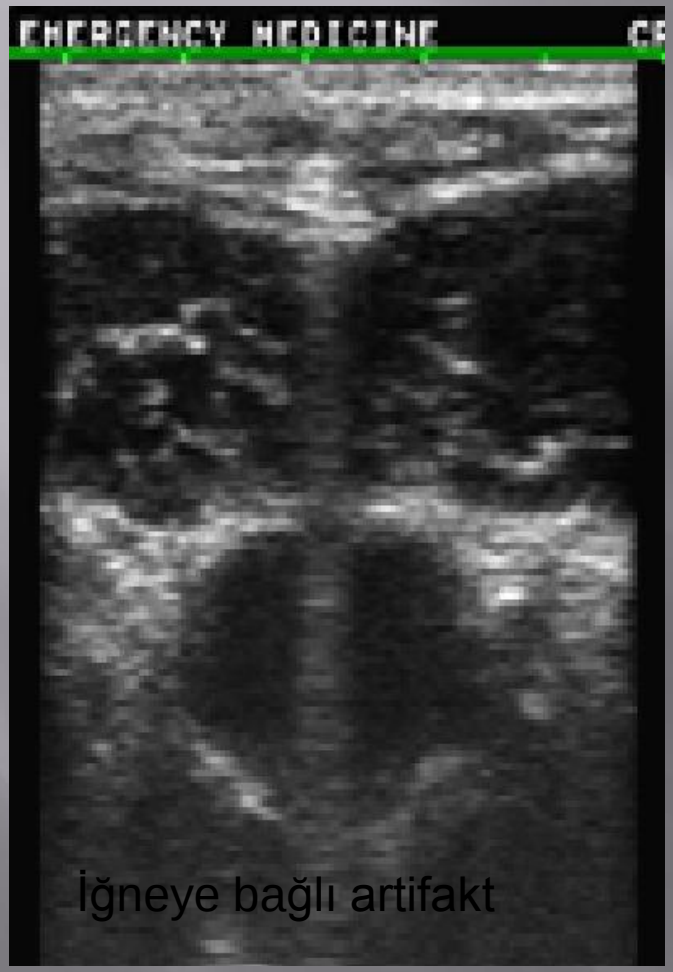
Santral venöz kateter takılırken USG



Tiroid



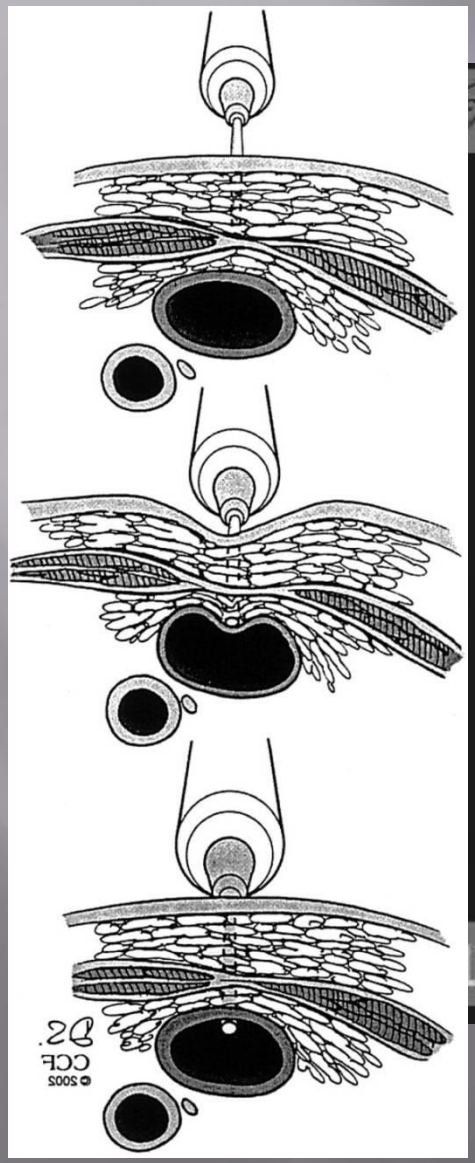
Santral venöz kateter takılırken USG

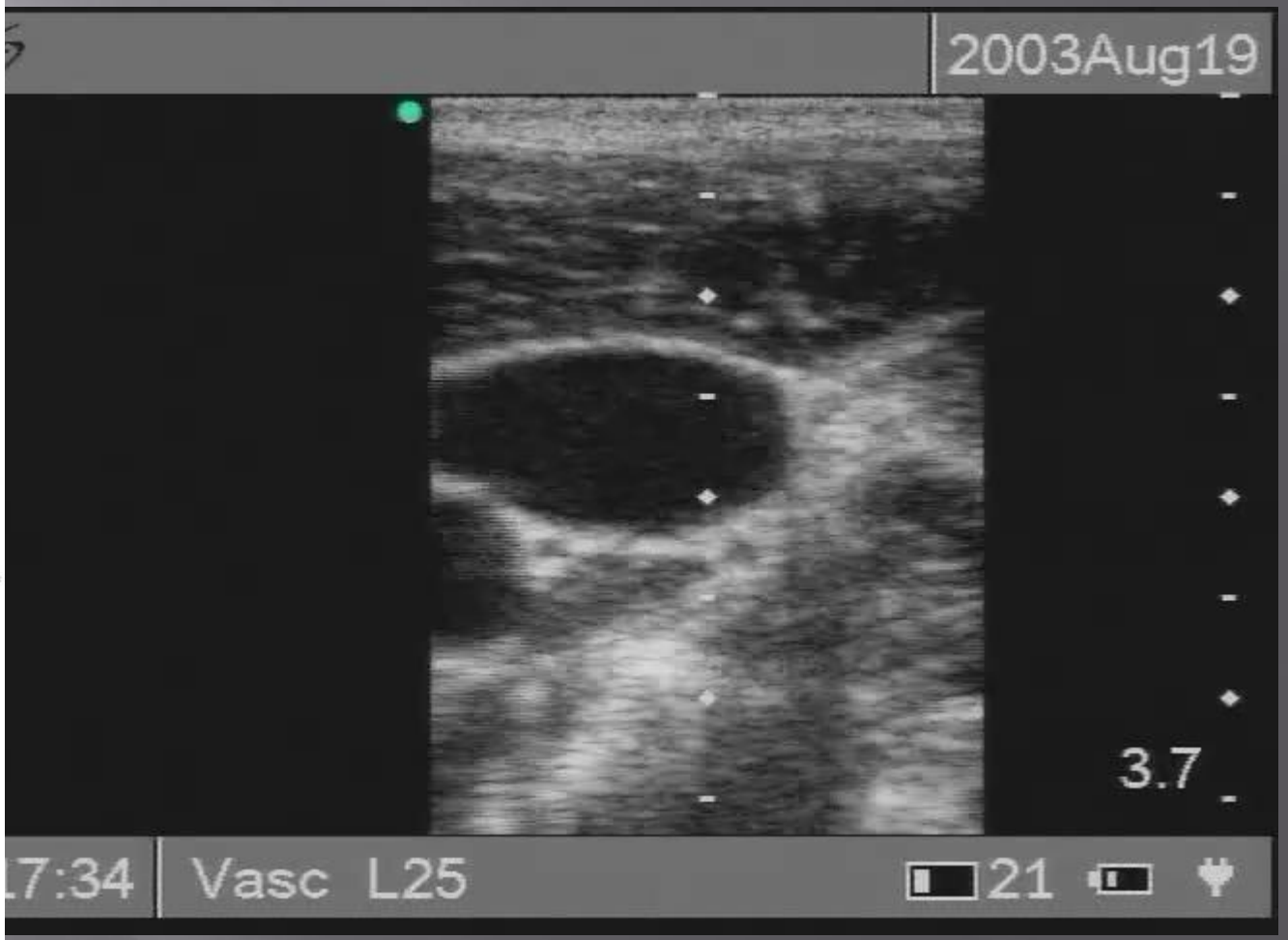


İğneye bağlı artifakt

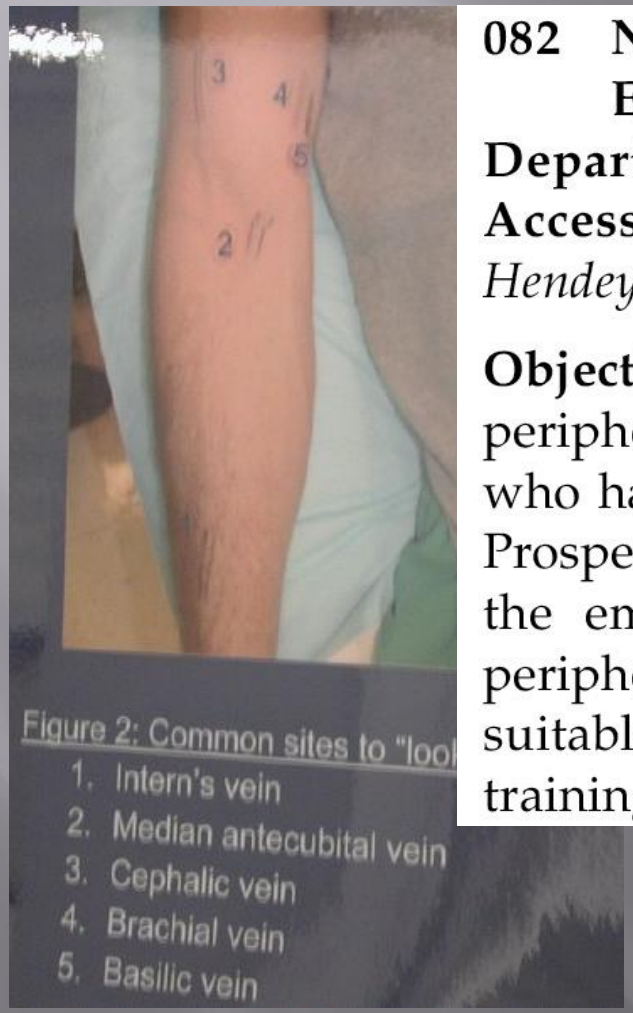
Probu tutan el, hastada sabitleniyor

İnt. juguler ven kateterin yerleştirilmesi





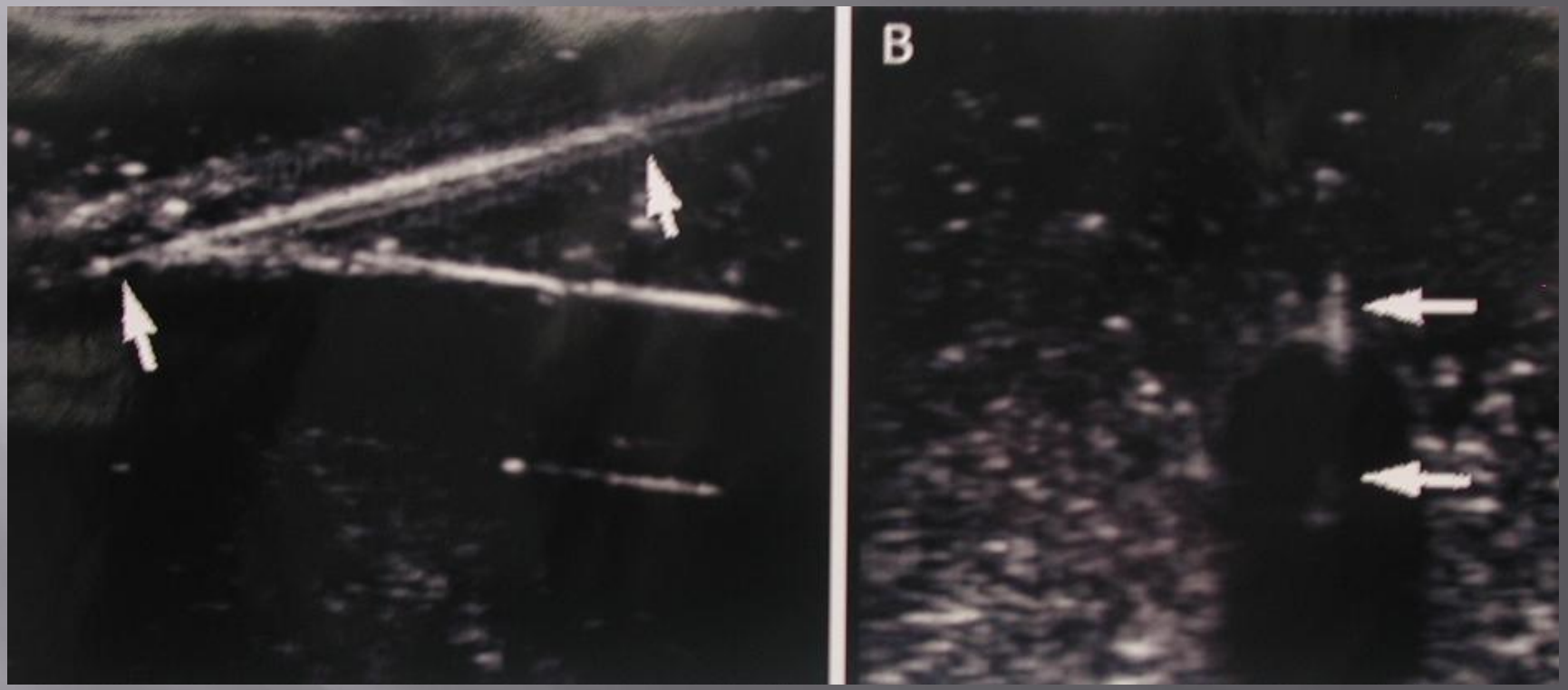
Daha küçük venler için de…



082 Nurse-performed Ultrasound-guided Upper Extremity Venous Cannulation in Emergency Department Patients with Difficult Venous Access *Brian F Chinnock, Stephen Thornton, Gregory W Hendey; UCSF, Fresno, Medical Education Program: Fresno, CA*

Objective: To determine the proficiency of nurses in placing peripheral lines using ultrasound (US) guidance in patients who had failed initial intravenous (IV) attempts. **Methods:** Prospective, observational study of patients presenting to the emergency department (ED) with at least 2 failed peripheral IV attempts and no other obvious peripheral vein suitable for cannulation. Nurses were given a 2-hour training course in US-guided cannulation. A standardized

Daha küçük venler için de…



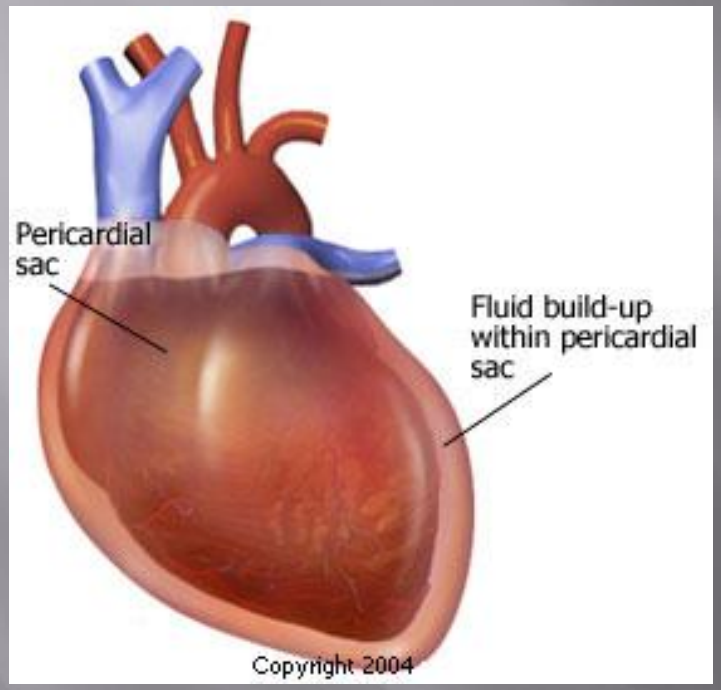
Transvers keside bakarak
branülü takmak daha kolay

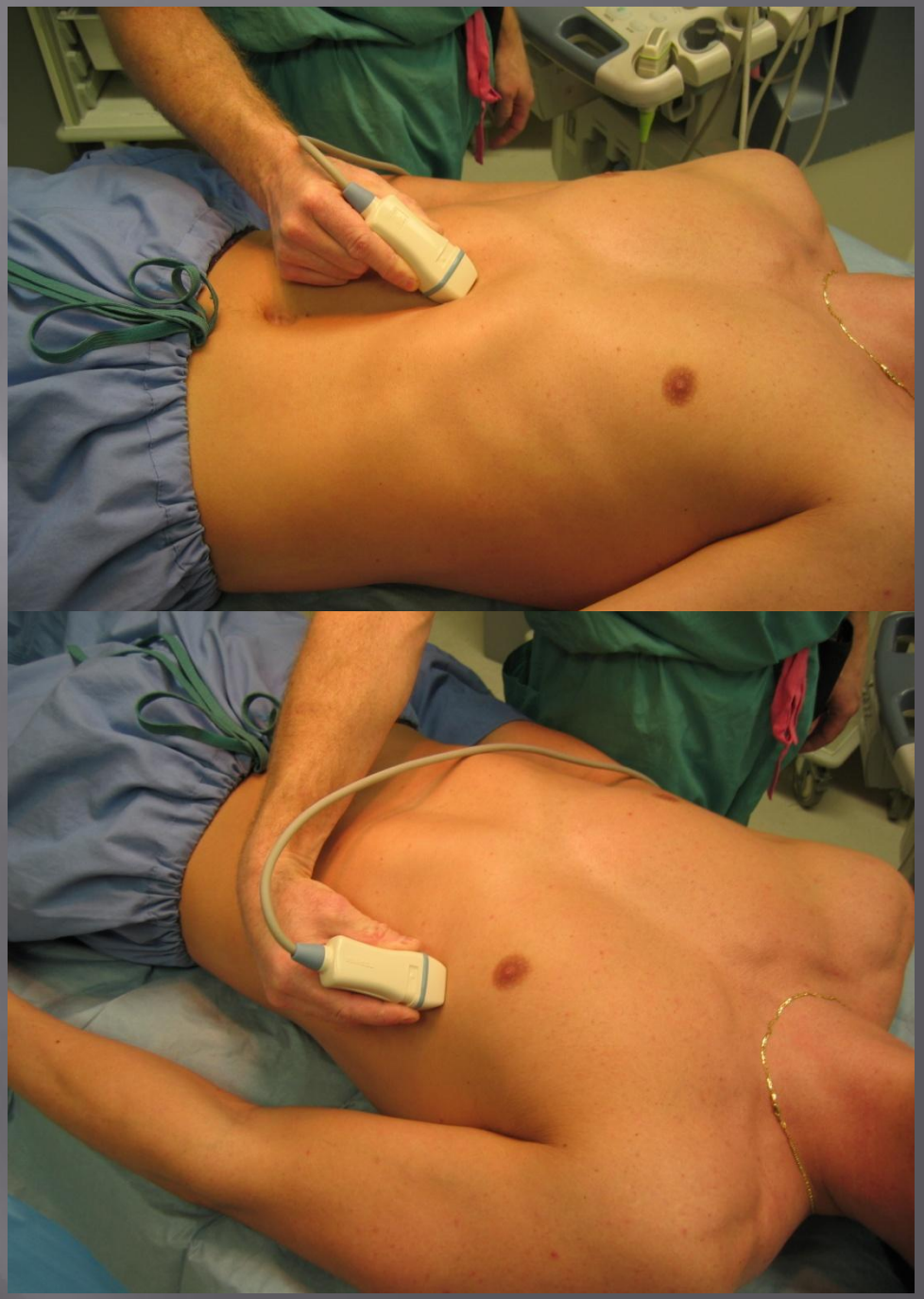
Perikardiyosentez

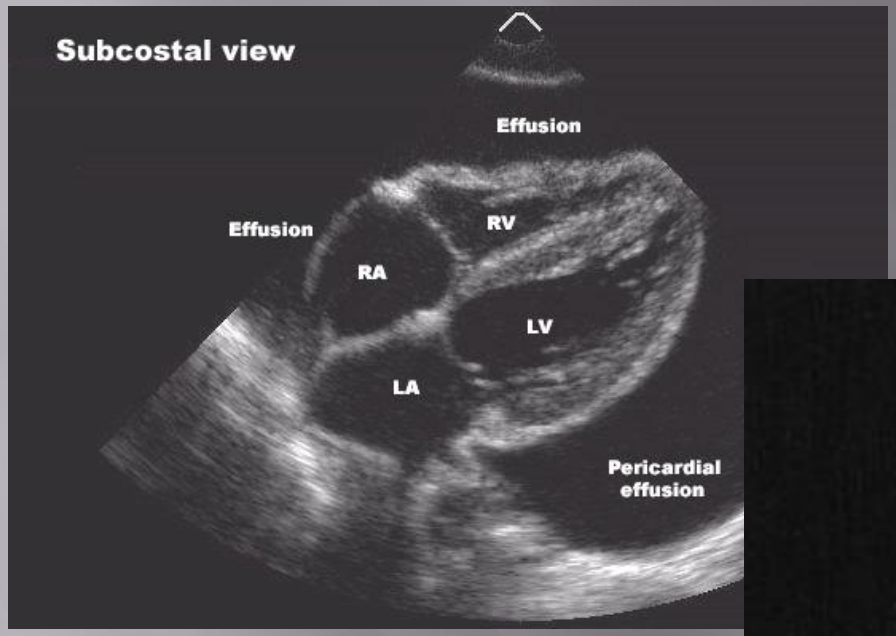
- USG cihazı yoksa subkostal yaklaşım
- USG ile yapmak daha az sorun…
- Sıvı birikiminin toraks duvarına ***en yakın olan yerden*** girilir

USG ile yapılan perikardiyosentez

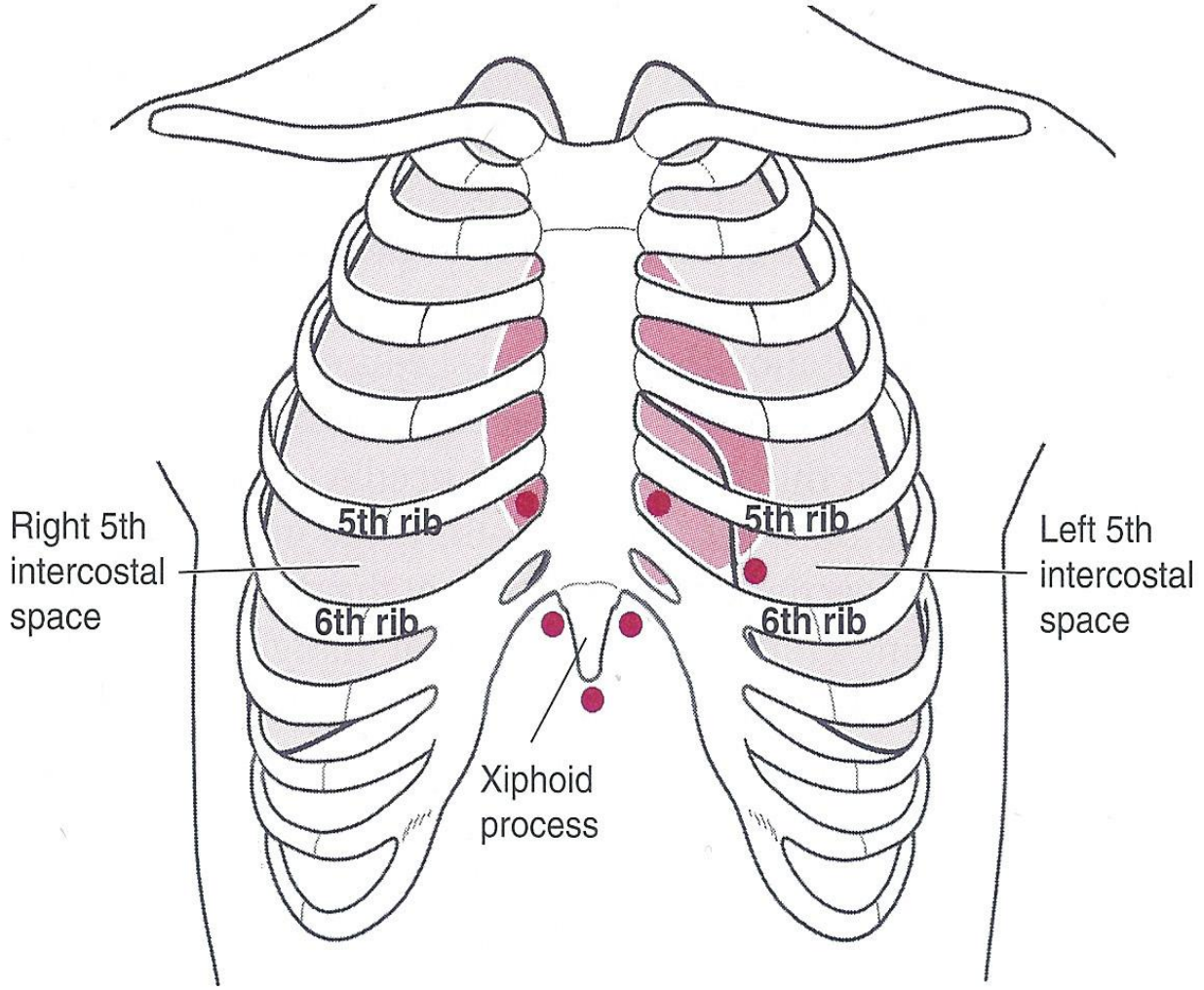
- Girişim yerinden emin olmak için iğneden çalkalanmış izotonik verilir
- Seldinger yöntemi ile kateter takılır
- Efüzyon drene edilir


Pericardial sac
Fluid build-up within pericardial sac
Copyright 2004

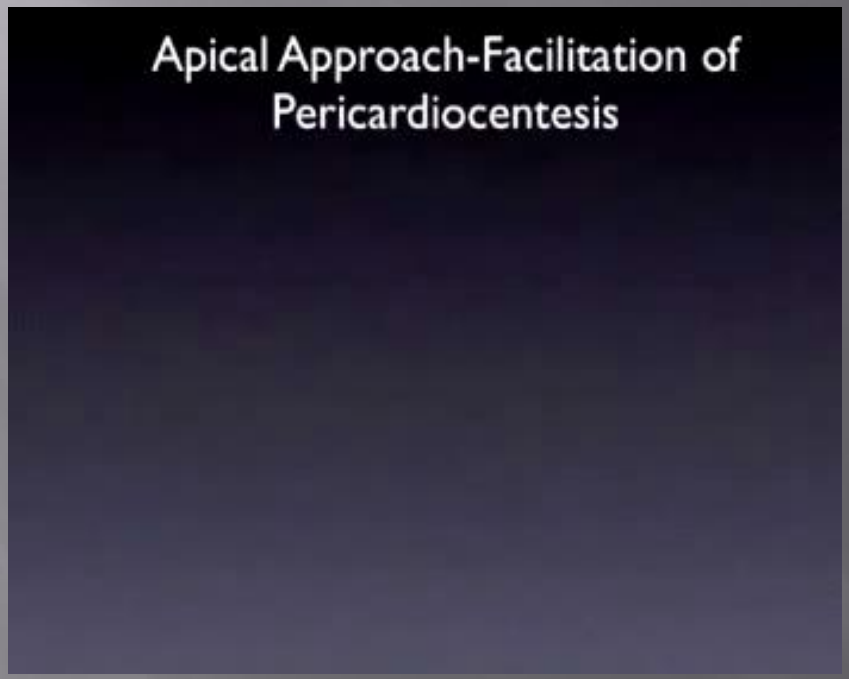




Apikal 4 odacık yönü

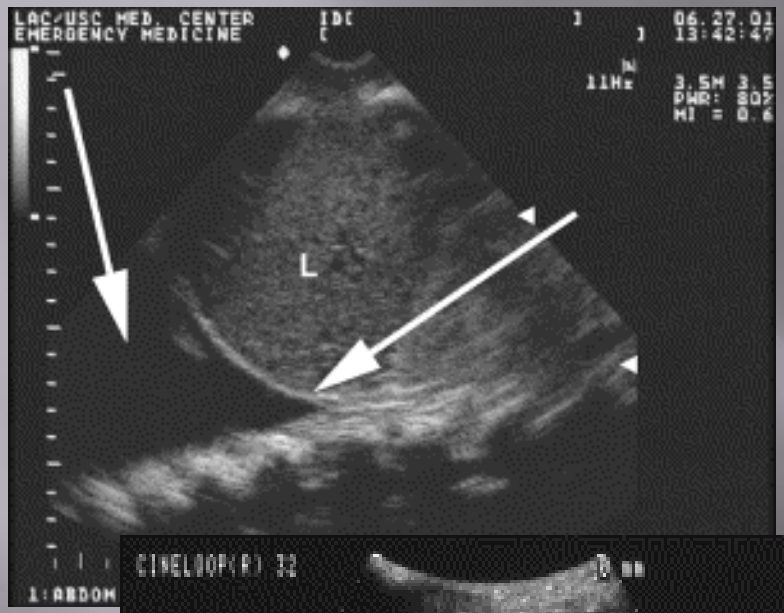

Right 5th intercostal space
5th rib
6th rib
5th rib
6th rib
Left 5th intercostal space
Xiphoid process

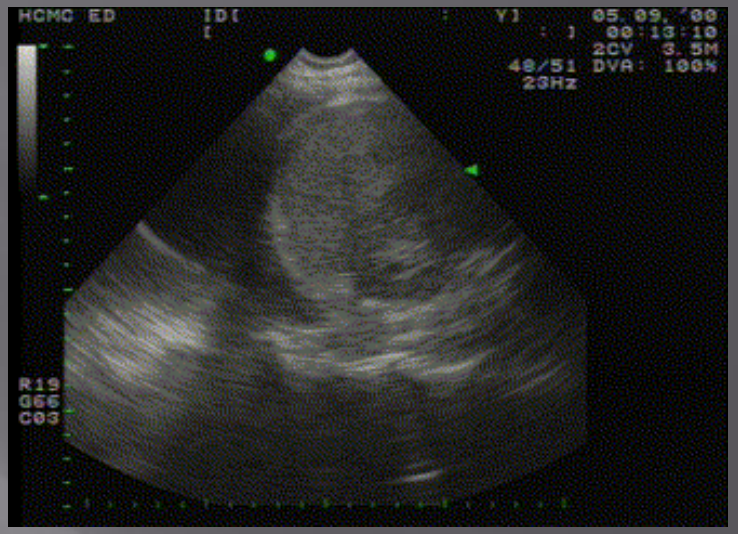
Tercihimiz: apekste perikardiyosentez

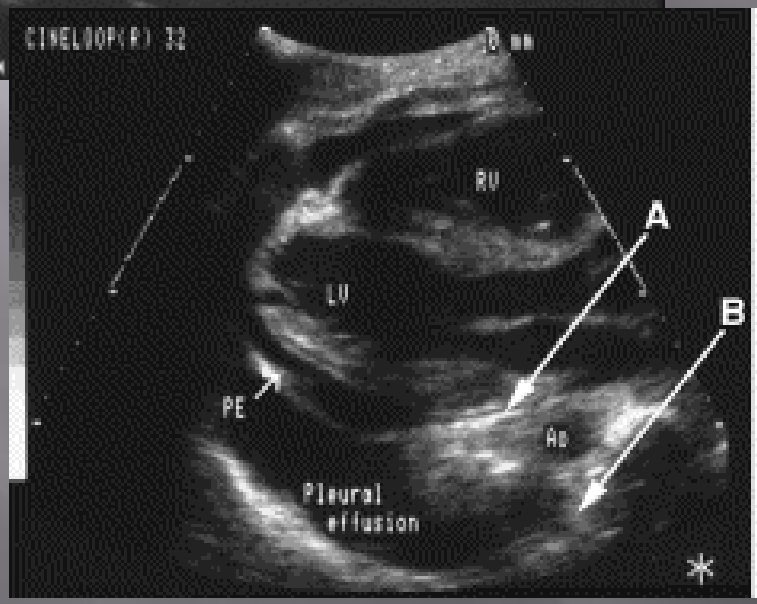


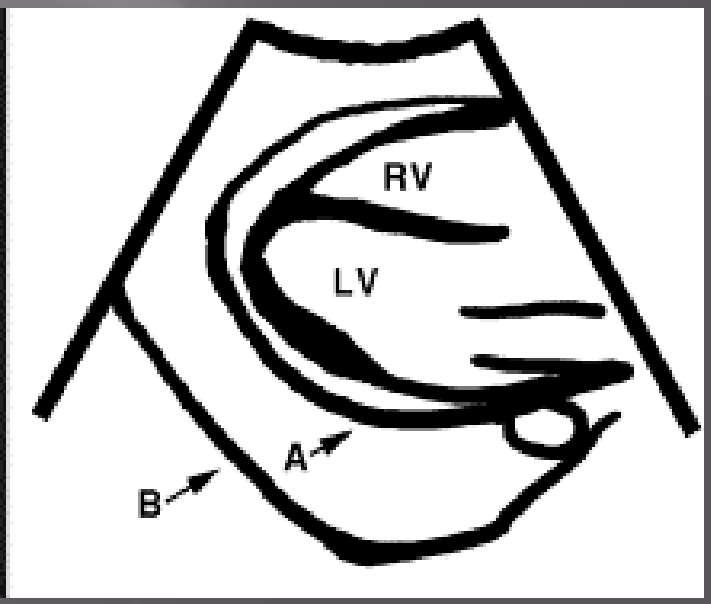
Ideal entry site, No. (% of all entries)			
Chest wall, No.	175 (79)	313 (76)	402 (81)
Para-apical	147 (67)	257 (62)	310 (63)
Left axillary	6 (3)	23 (6)	21 (4)
Left parasternal	19 (9)	24 (6)	40 (8)
Right parasternal	2 (1)	8 (2)	29 (6)
Posterolateral	1 (0)	1 (0)	2 (0)
Subcostal, No.	46 (21)	89 (22)	73 (15)
Unspecified, No.	0 (0)	10 (2)	19 (4)

Plevral sıvı ve torasentez

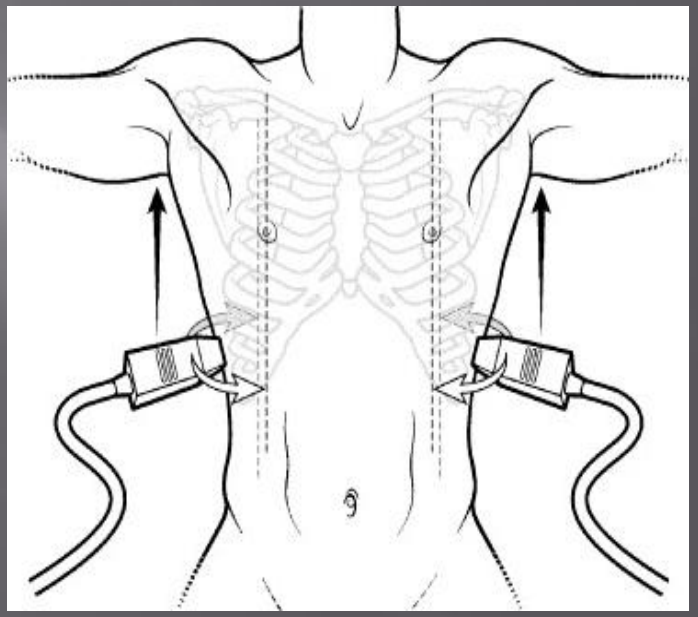




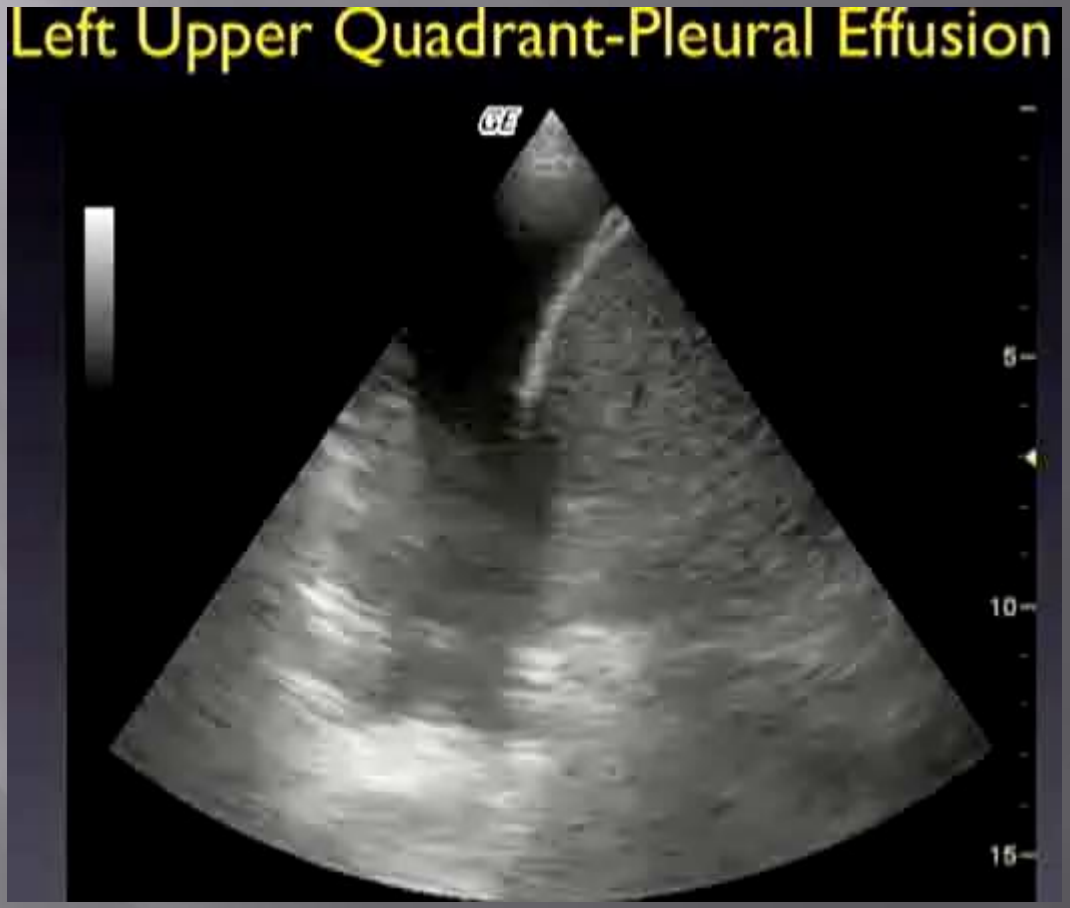




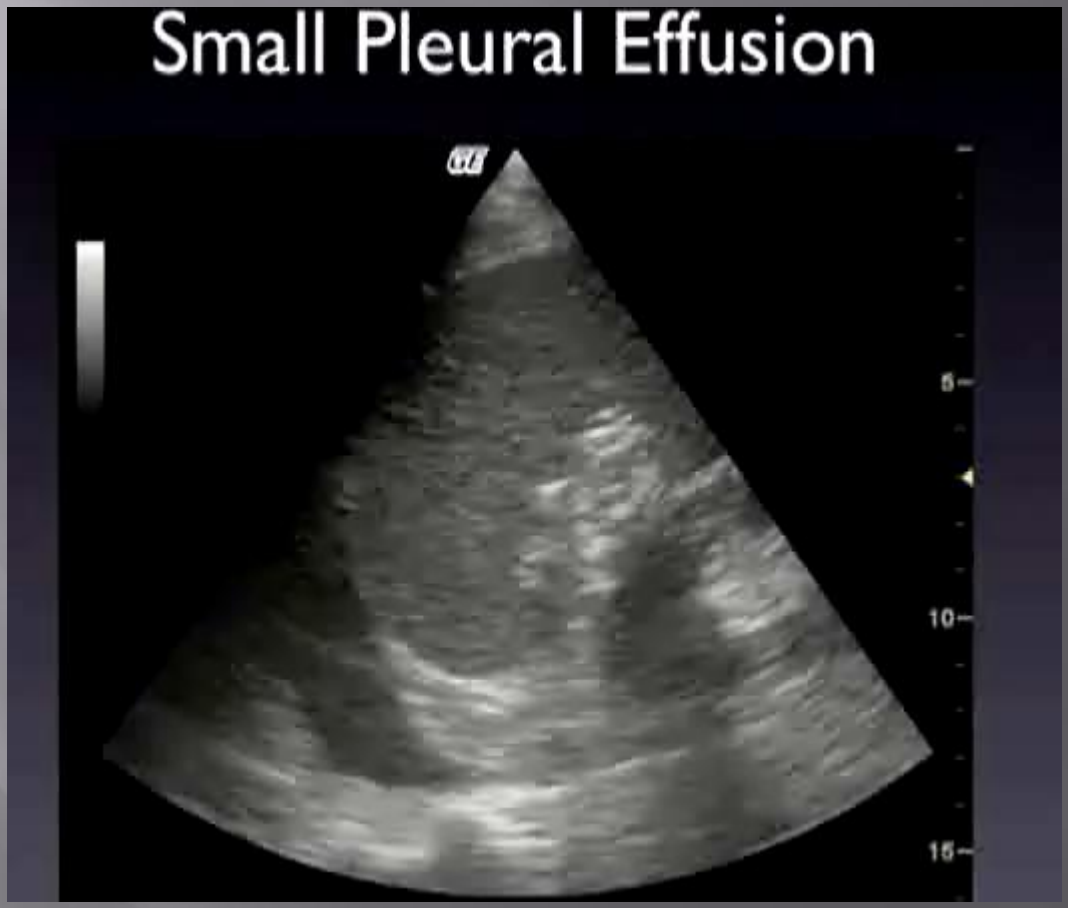
Plevral sıvı ve torasentez



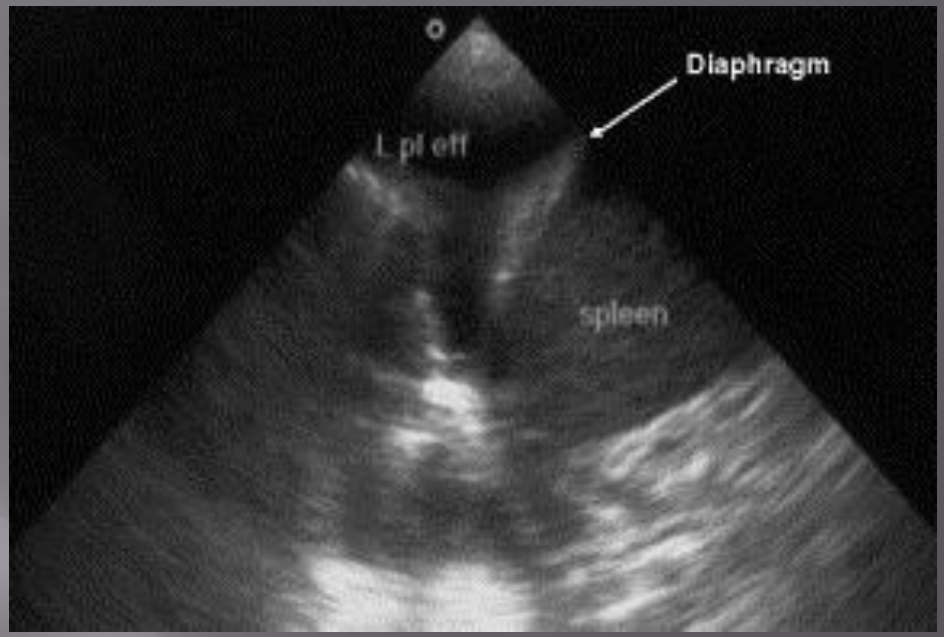
Left Upper Quadrant-Pleural Effusion



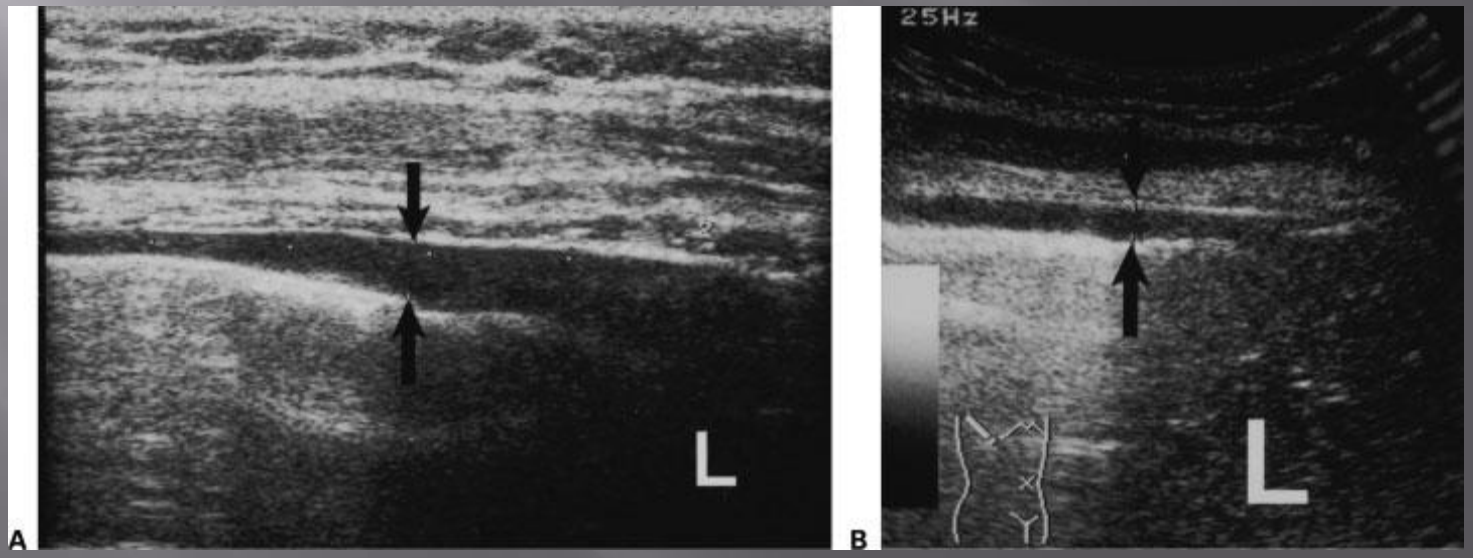
Small Pleural Effusion

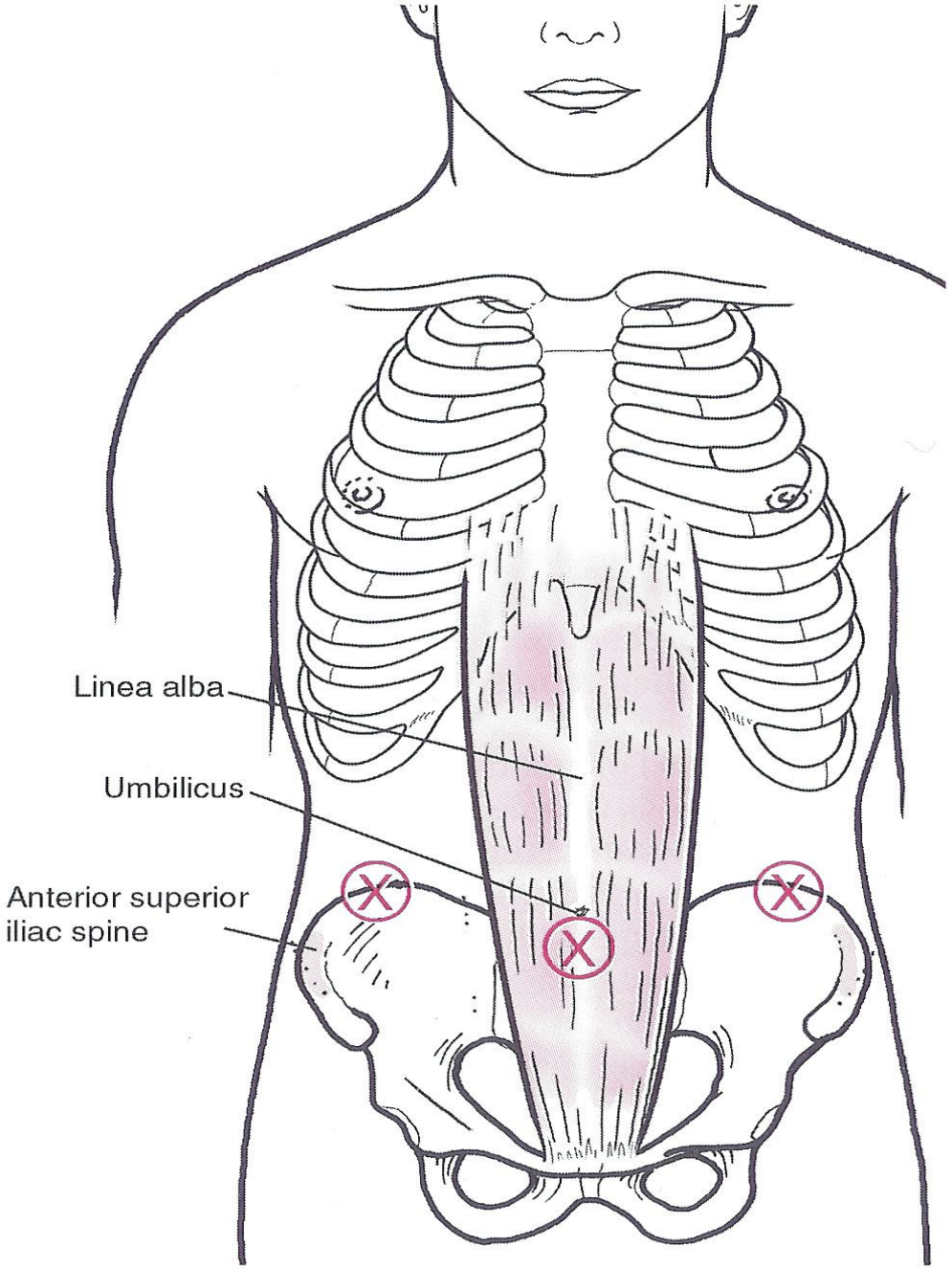


Plevral sıvı

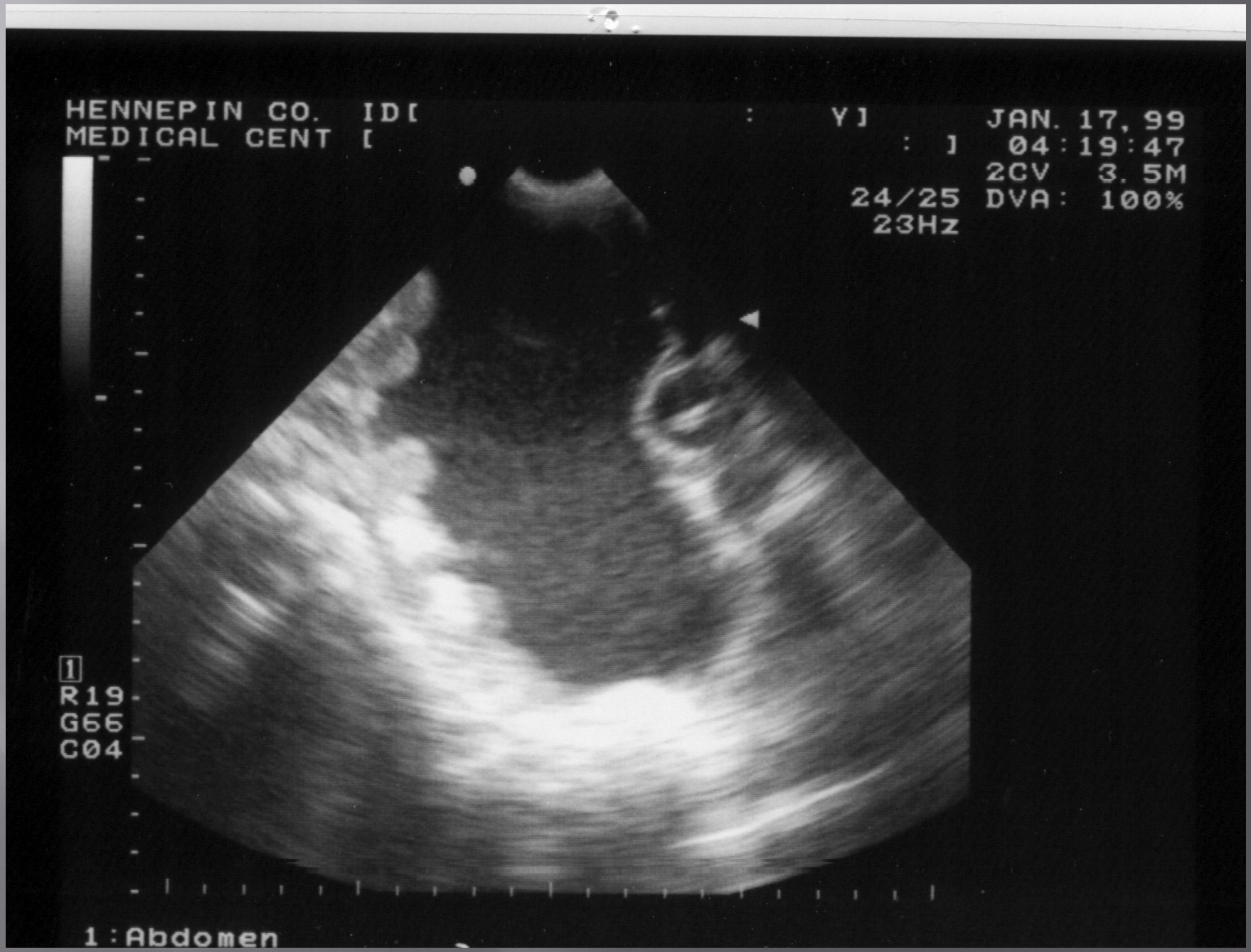


normal



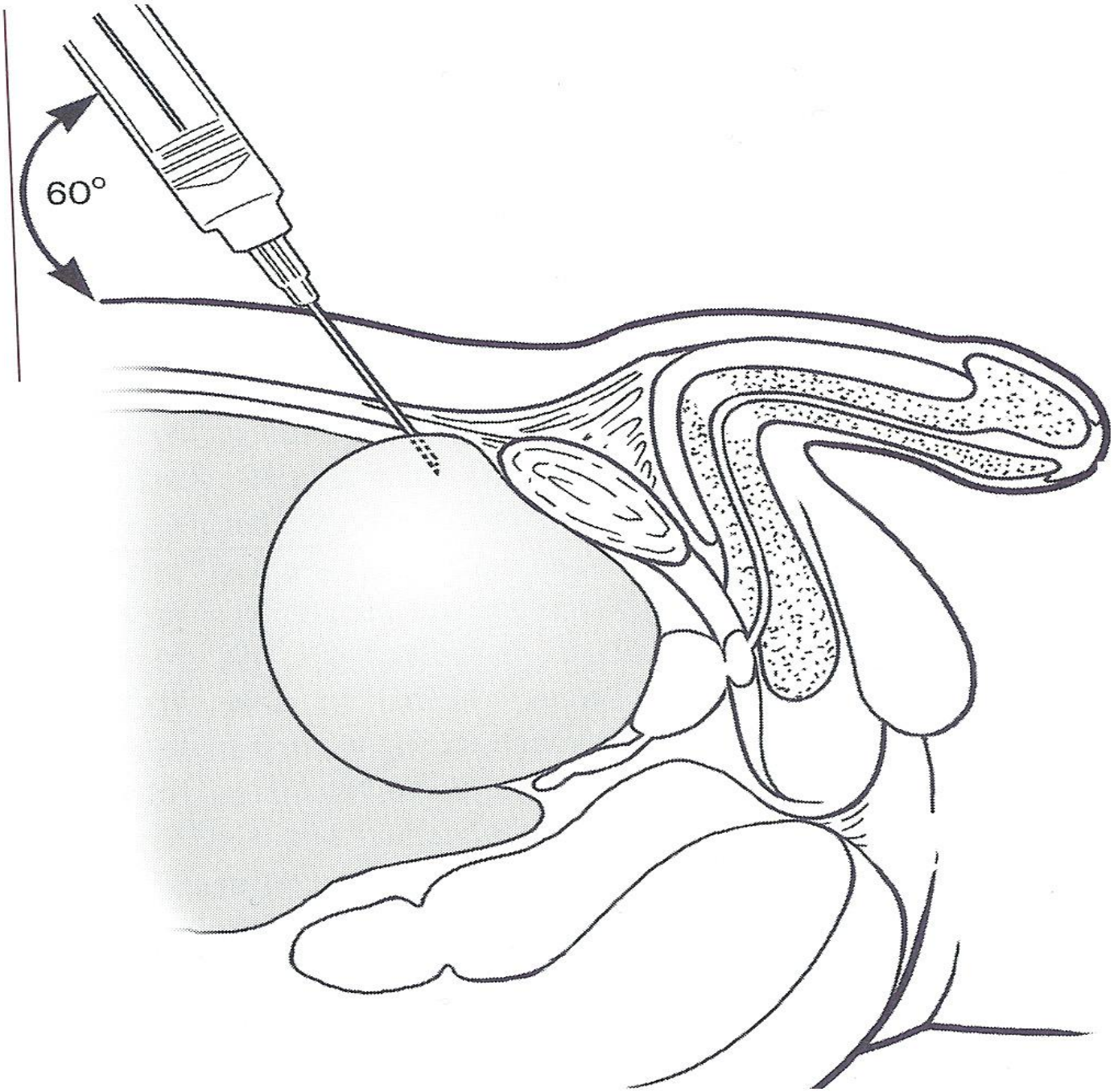

Linea alba
Umbilicus
Anterior superior
iliac spine

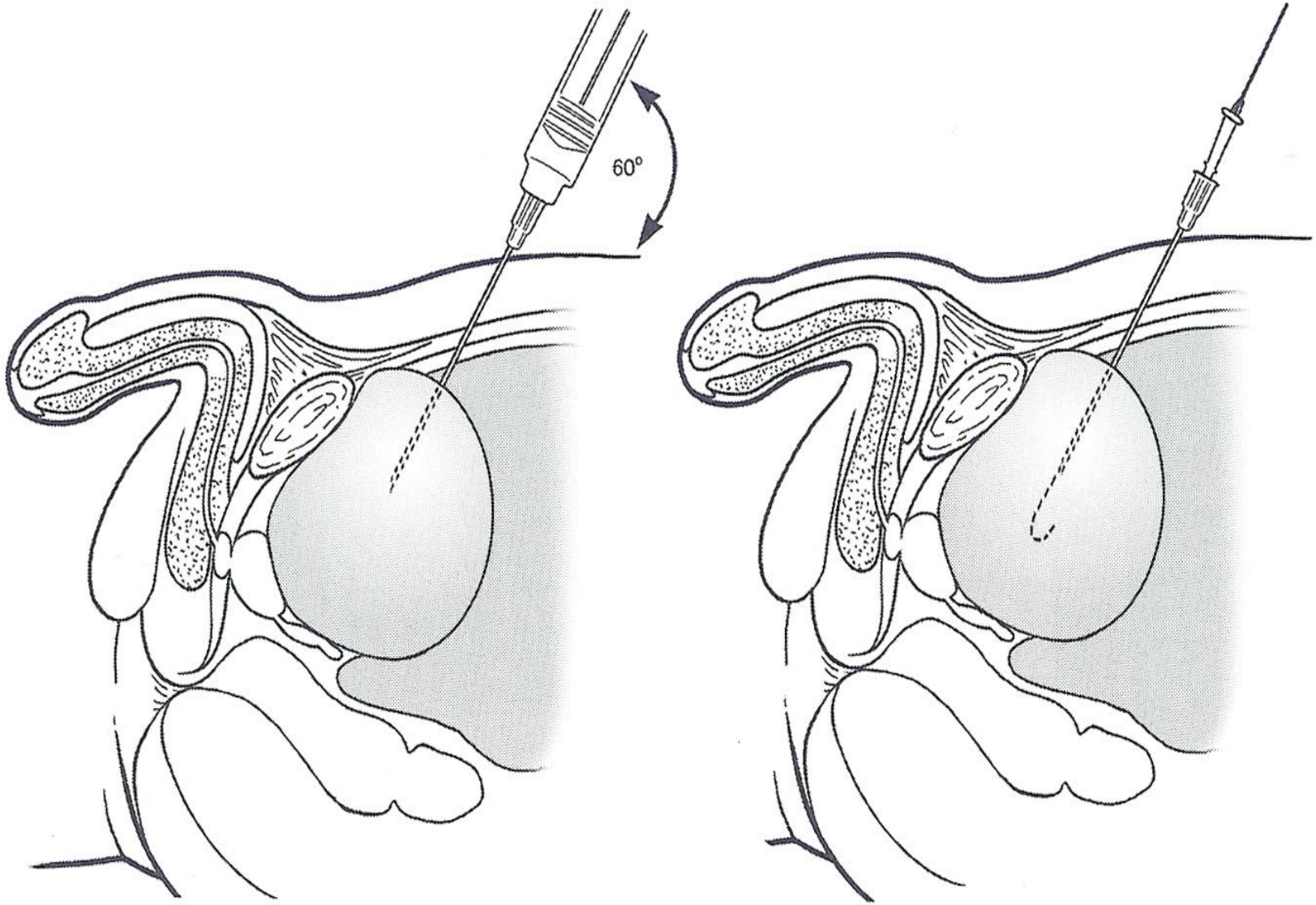

HCMC ED
05.05.'00
13:46:17
3CV 3.5M
45/51 DVA: 100%
26Hz
R19
G53
C04
1 2 3 4 5 6 7
CV 5.0 CV 3.5 CV 3.5
TV 14R 14R 60R

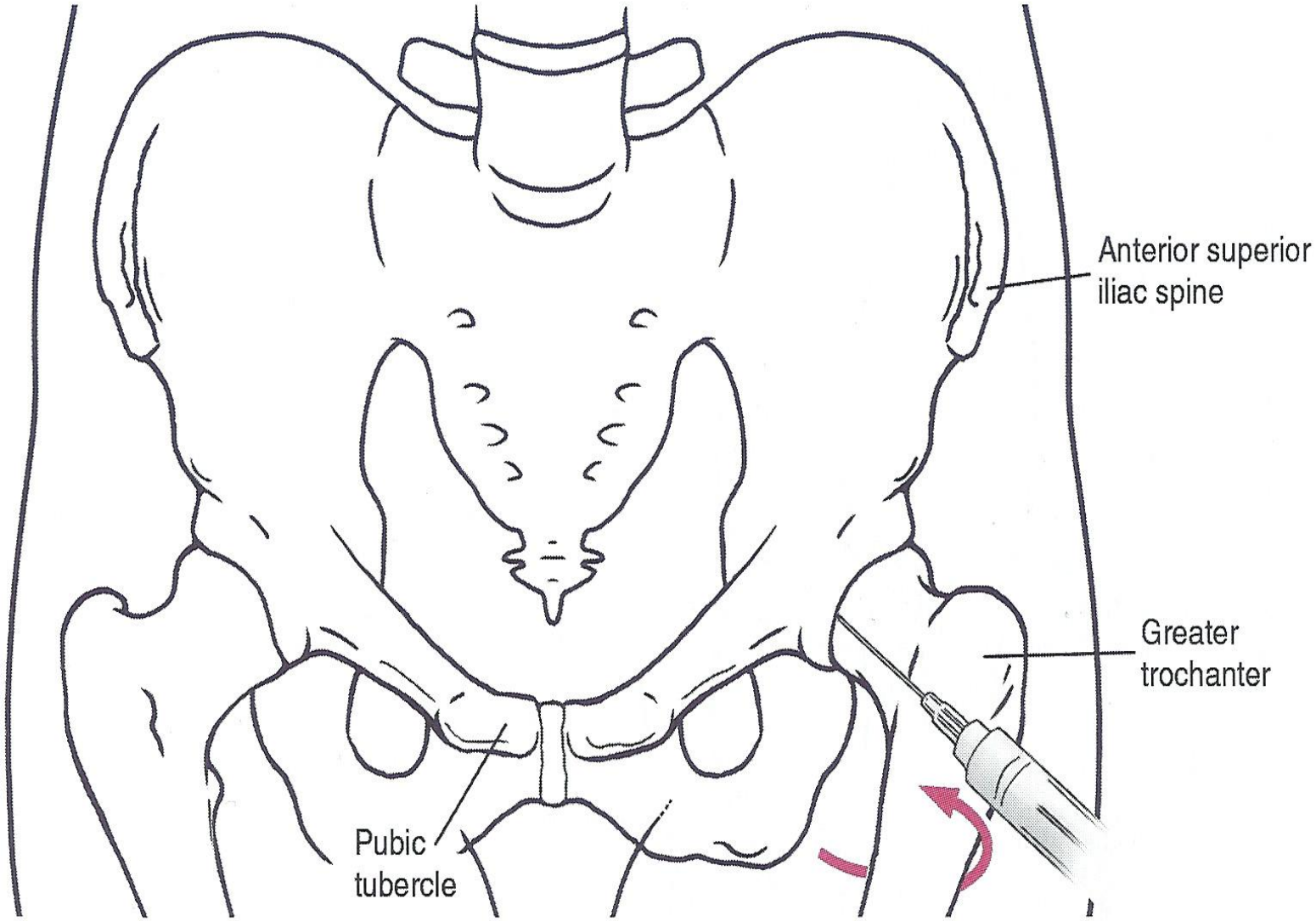

HENNEPIN CO. ID[: YJ JAN. 17, 99
MEDICAL CENT [:] 04:19:47
2CV 3.5M
24/25 DVA: 100%
23Hz
1
R19
G66
C04
1:Abdomen

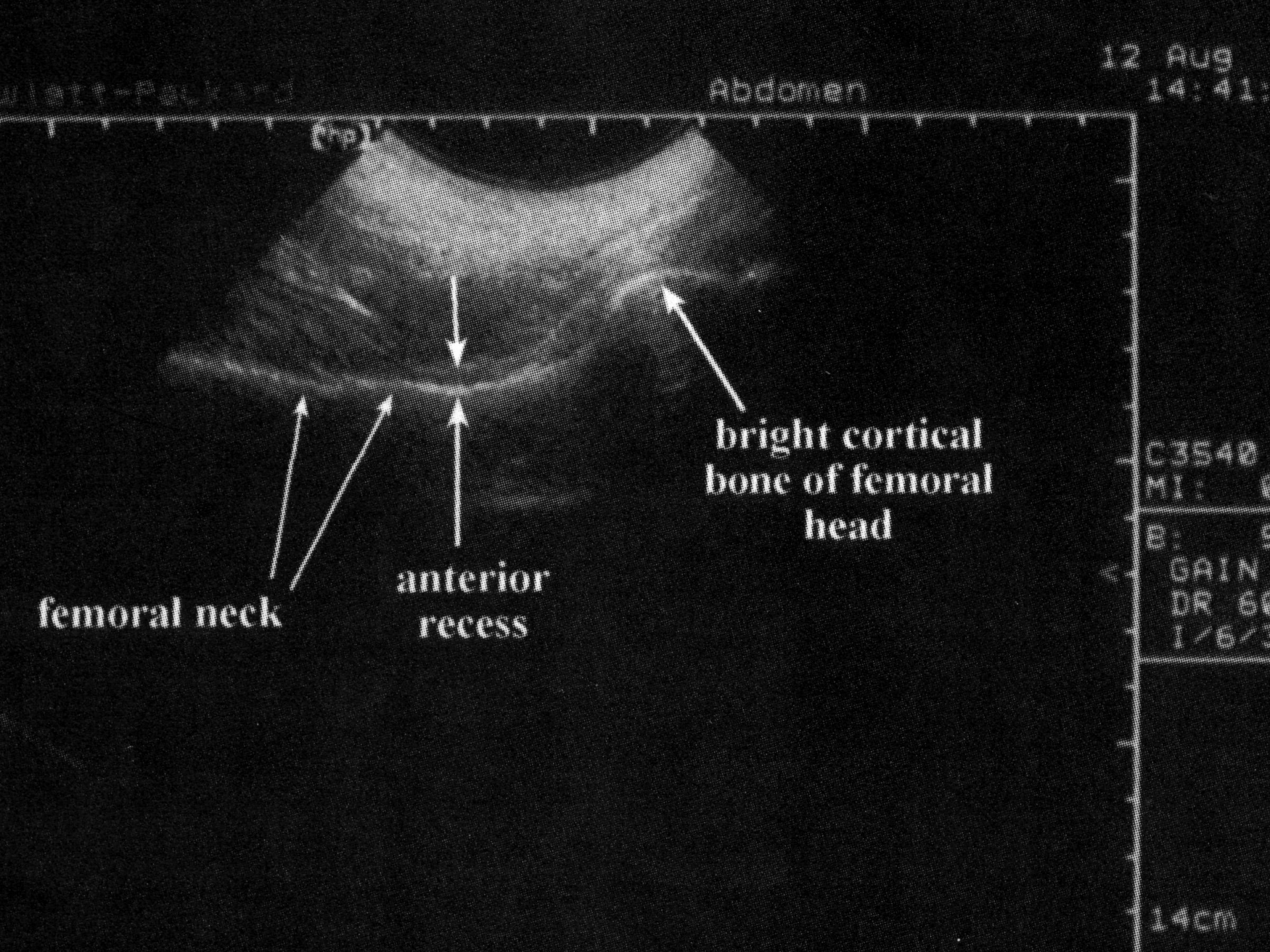
SUPRAPUBIK ASPIRASYON


TOSHIBA
HCMC EMERGENCY DEPARTMENT
ABD/OB
10/28/2004
04:08:18AM
P55
6C3
T4.6
18fps
DR65
2DG
76
0
5
10
15
#26
DMUReady


60°

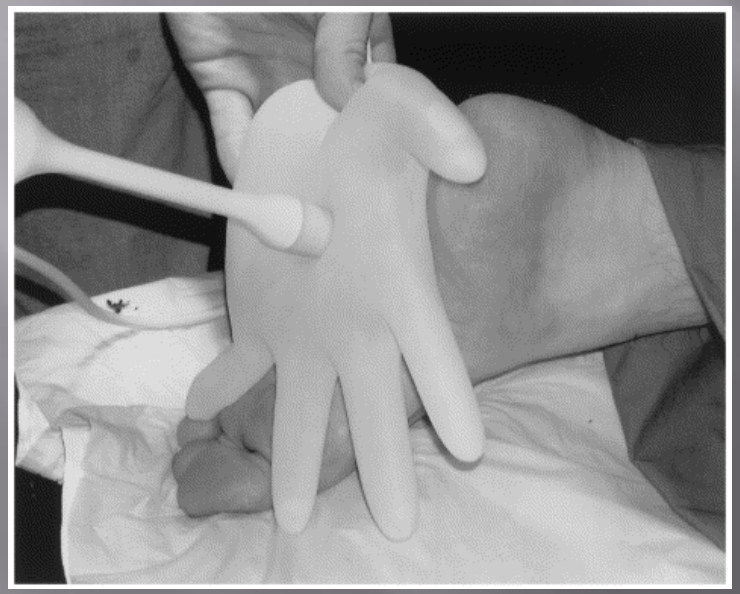

60°

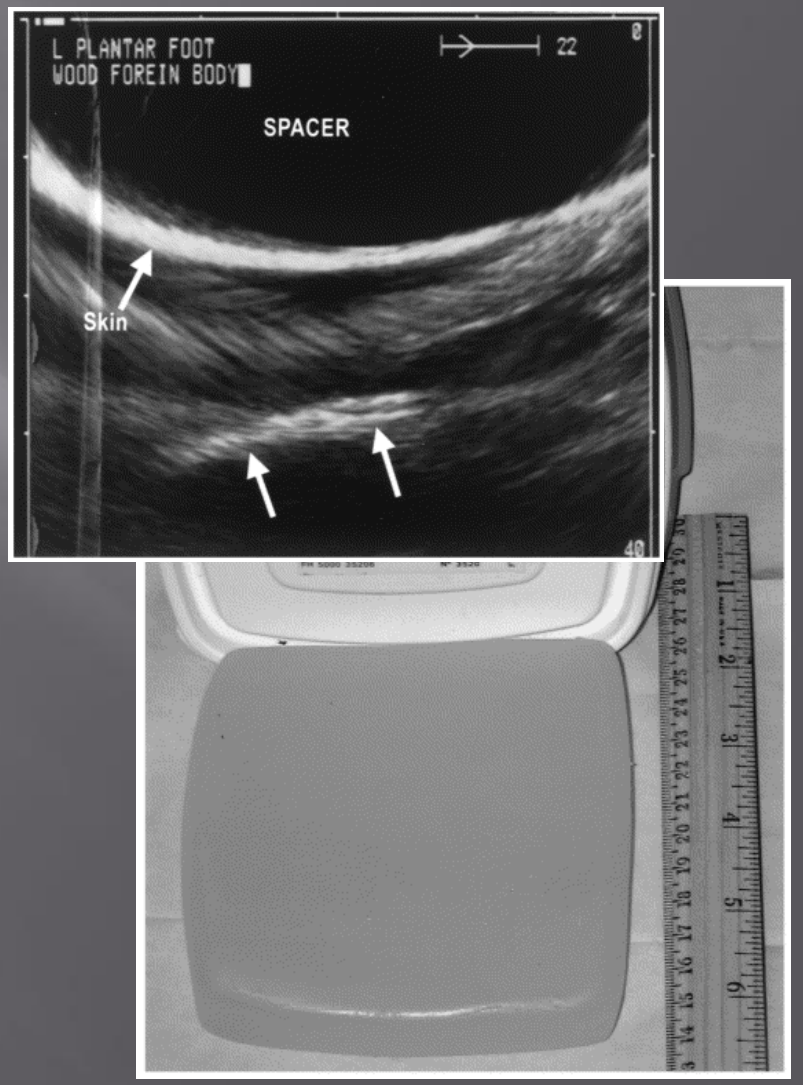

Anterior superior
iliac spine
Greater
trochanter
Pubic
tubercle


Abdomen
femoral neck
anterior recess
bright cortical bone of femoral head

Yabancı cisimler

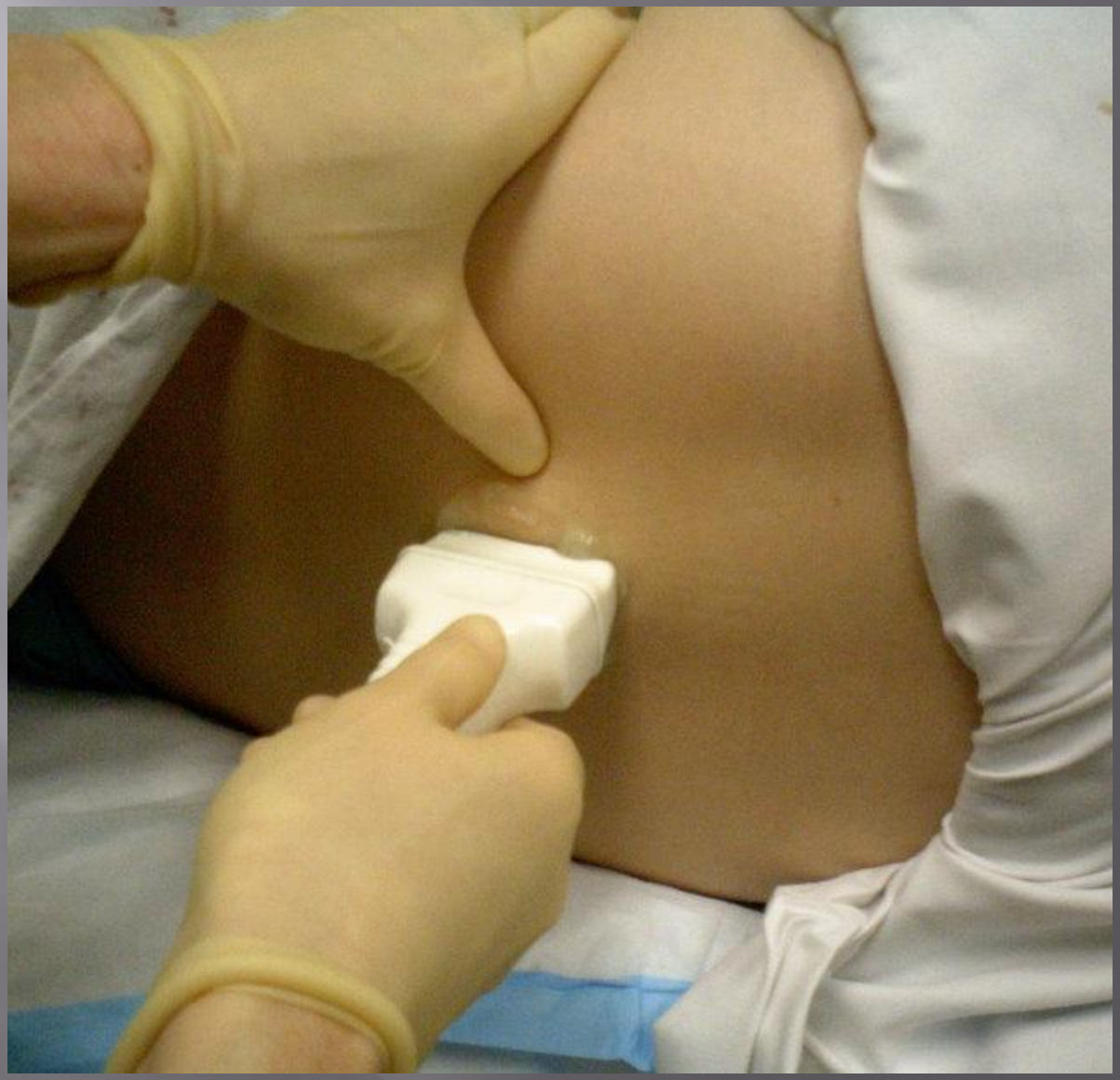
- Prob ve y.c. arasında mesafe

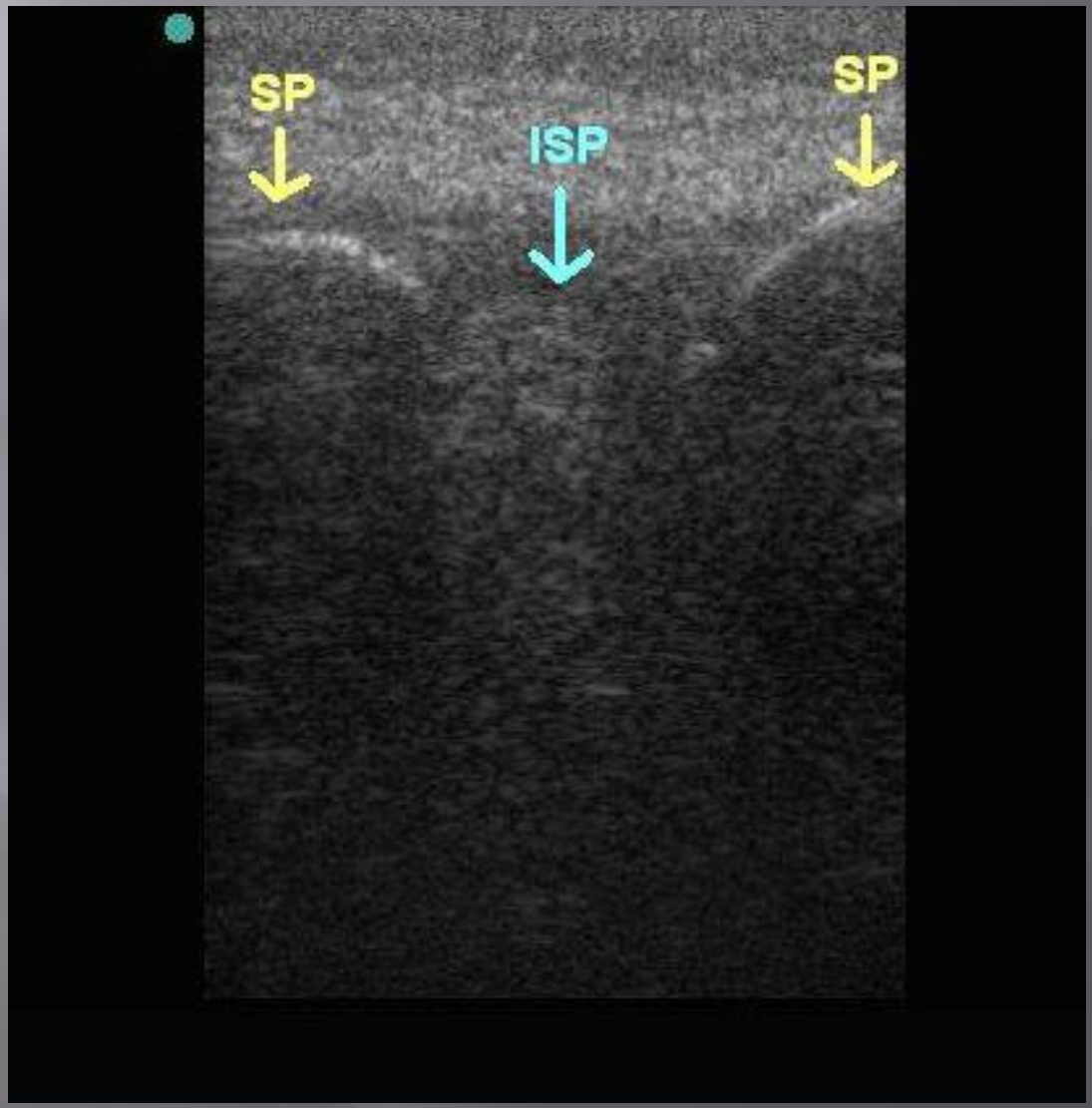




Yabancı cisimler

LP'den önce




SP
ISP
SP

TEŞEKKÜRLER