



CONTROVERSES ET ACTUALITÉS EN CHIRURGIE VASCULAIRE
CONTROVERSIES & UPDATES
IN VASCULAR SURGERY



JANUARY 23-25 2014

MARRIOTT RIVE GAUCHE & CONFERENCE CENTER PARIS, FRANCE

**PRINCIPLE OF ULTRASOUND GUIDED
SCLEROTHERAPY BY DIRECT PUNCTURE**

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www.cacvs.org

DESNOS 2014



Disclosure

Speaker name: Claudine HAMEL-DESNOS

.....

- I have the following potential conflicts of interest to report:
 - Consulting
 - Employment in industry
 - Shareholder in a healthcare company
 - Owner of a healthcare company
 - Other(s)
- I do not have any potential conflict of interest**

Direct puncture

The needle is mounted on a syringe filled with sclerosant

Visual sclerotherapy



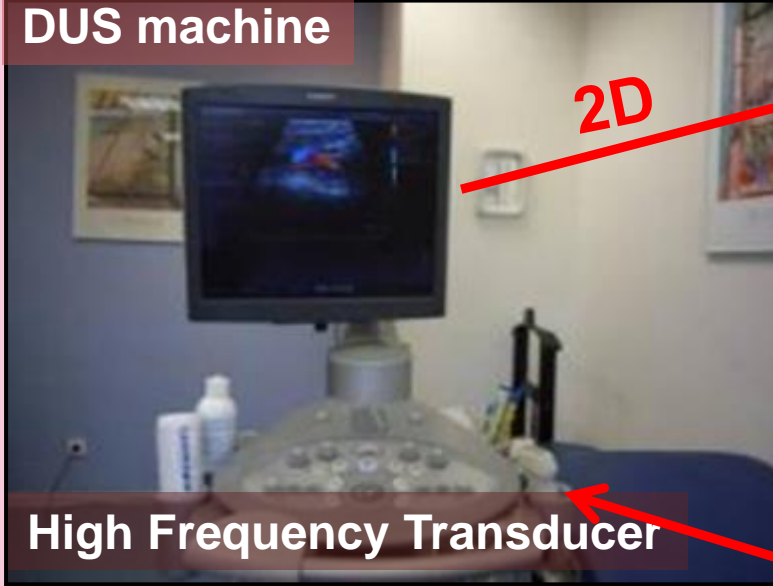
US Guided Foam Sclerotherapy





You need 2 hands and ... a brain (coordination)

DUS machine

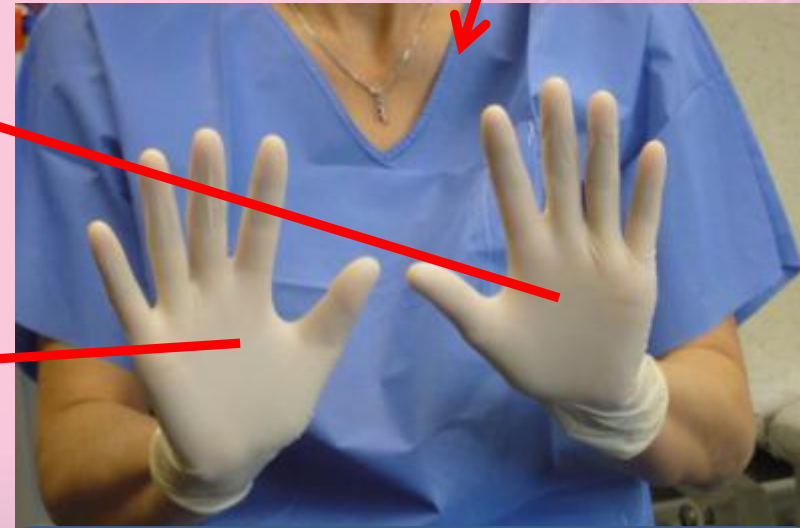
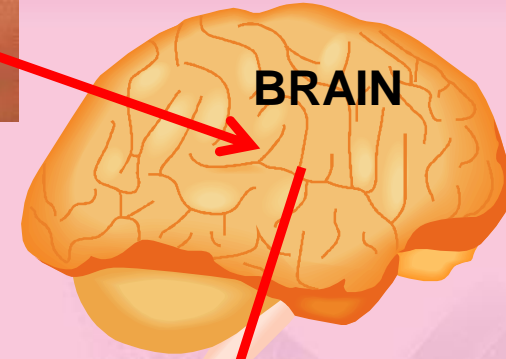


2D

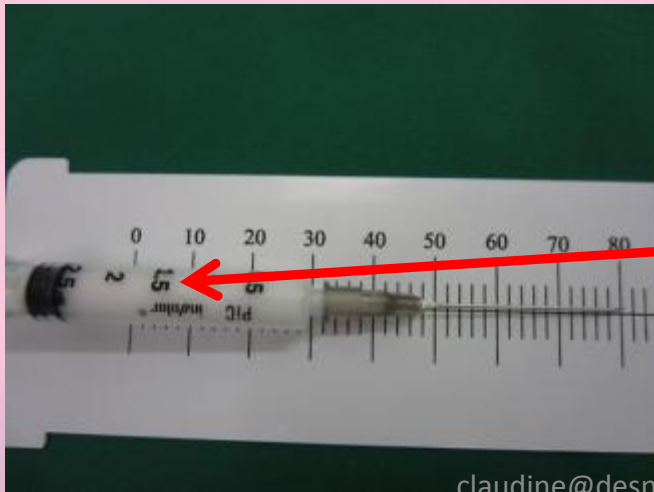
High Frequency Transducer



BRAIN



Hands act separately but must be
coordinated





Spasm and complete filling of the SSV with only 2.5 mL of 1% POL foam

USGFS

**PROCEDURE =
entirely done under
B-mode control**

1. Checking the target vein and the area
2. Puncture of the vein + blood backflow in needle
3. Injection
4. Post-injection US control



- *Hamel-Desnos et al. Phlébologie 2003*
- *Report of French Health Authorities (ANAES 2004)*
- *European guidelines; Rabe et al. Phlebology 2013*

VIDEO 6

www.cacvys.org
claudine@desnos.eu

USGFS (video)

Longitudinal view

*FOAM=1+4 (1 part POL+ 4 parts of air)
1% POL*



Real time

Video 7

claudine@desnos.eu

CONCENTRATIONS

(European Guidelines – Rabe E. et al. Phlebology 2013)

Concentration of the sclerosant in foam sclerotherapy.

Recommendation 25: We recommend choosing the following concentration in relation to the **diameter** of the venous segment to be treated. Concentrations and volumes proposed are just indicative and may be changed according to the judgement of the therapist (Table 4).



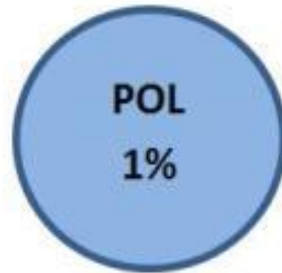
CHOICE OF CONCENTRATION : DEPENDS ON THE DIAMETER

POL = polidocanol
Air foam (1+4)

of the venous segment to be treated
(measure done patient in the standing position)



$\emptyset < 4\text{mm}$



$\emptyset \geq 4 \text{ et } \leq 6 \text{ mm}$



$\emptyset > 6 \text{ et } < 9 \text{ mm}$



$\emptyset \geq 9\text{mm}$

Hamel-Desnos C. et al. Dermatol. Surg. 2003

Hamel-Desnos C et al. J Mal Vasc 2006

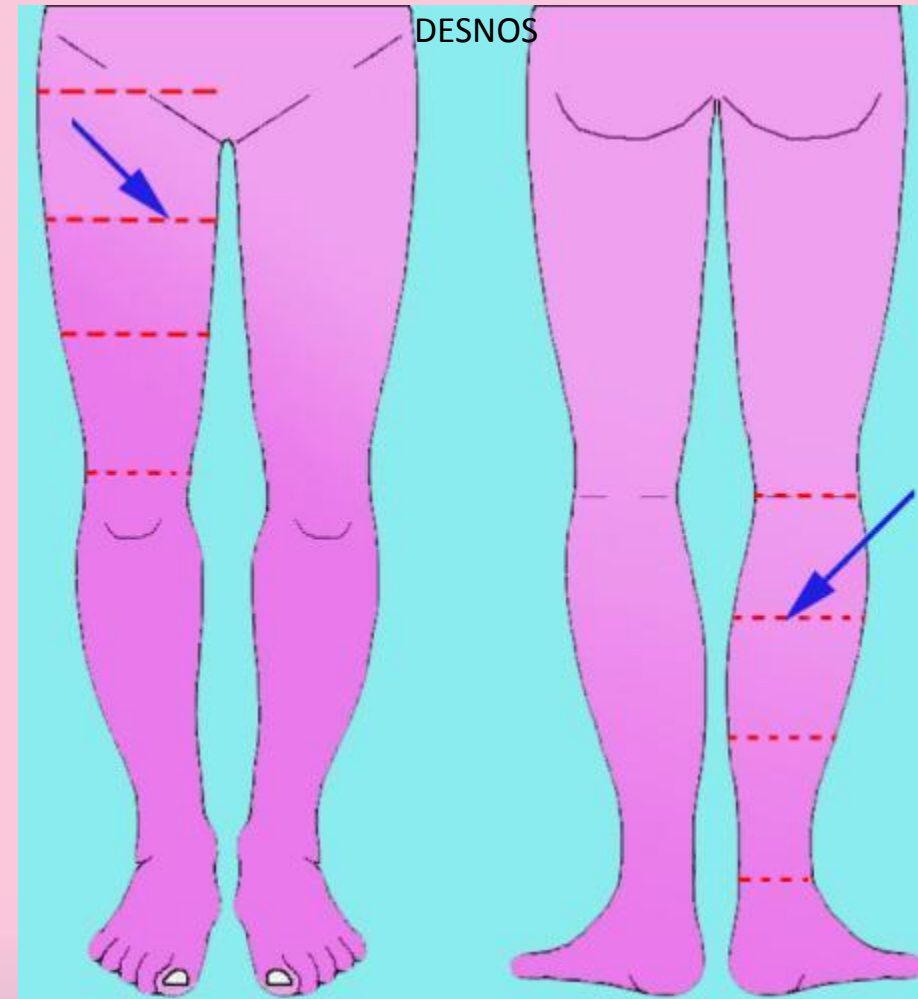
Hamel-Desnos C. et al. « The 3/1 Study ». Eur J Vasc Endovasc Surg 2007

Hamel-Desnos C. et al. in Traité de Médecine vasculaire. Elsevier Masson SAS 2011

FIRST SITE OF INJECTION (GSV, SSV)

(measure diameter)

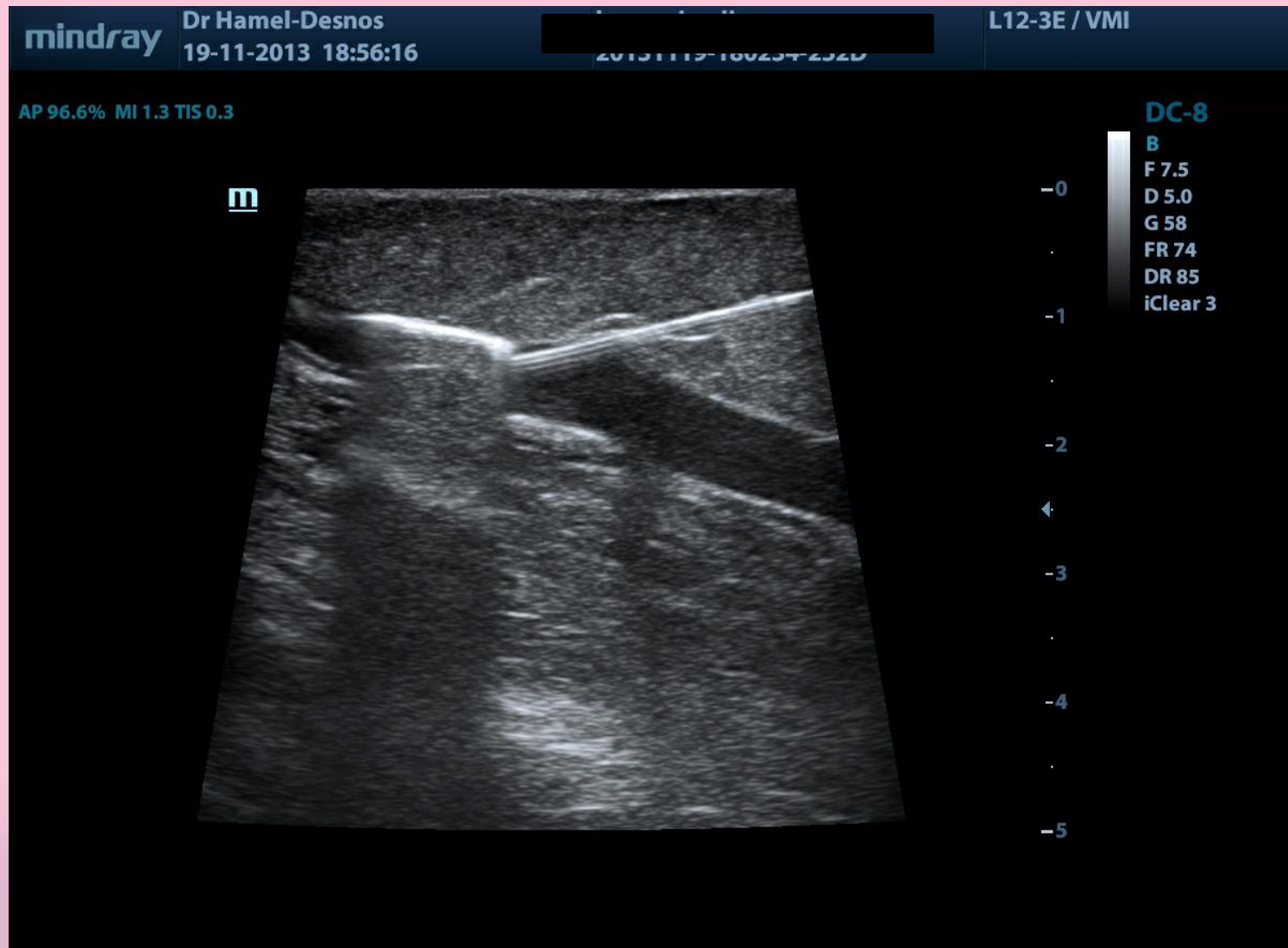
- ✓ Not too far from SFJ/SFP (for better effectiveness)
- ✓ Not too close to SFJ/SFP (for safety reasons: to avoid the arteries in the groin or in the popliteal fossa)



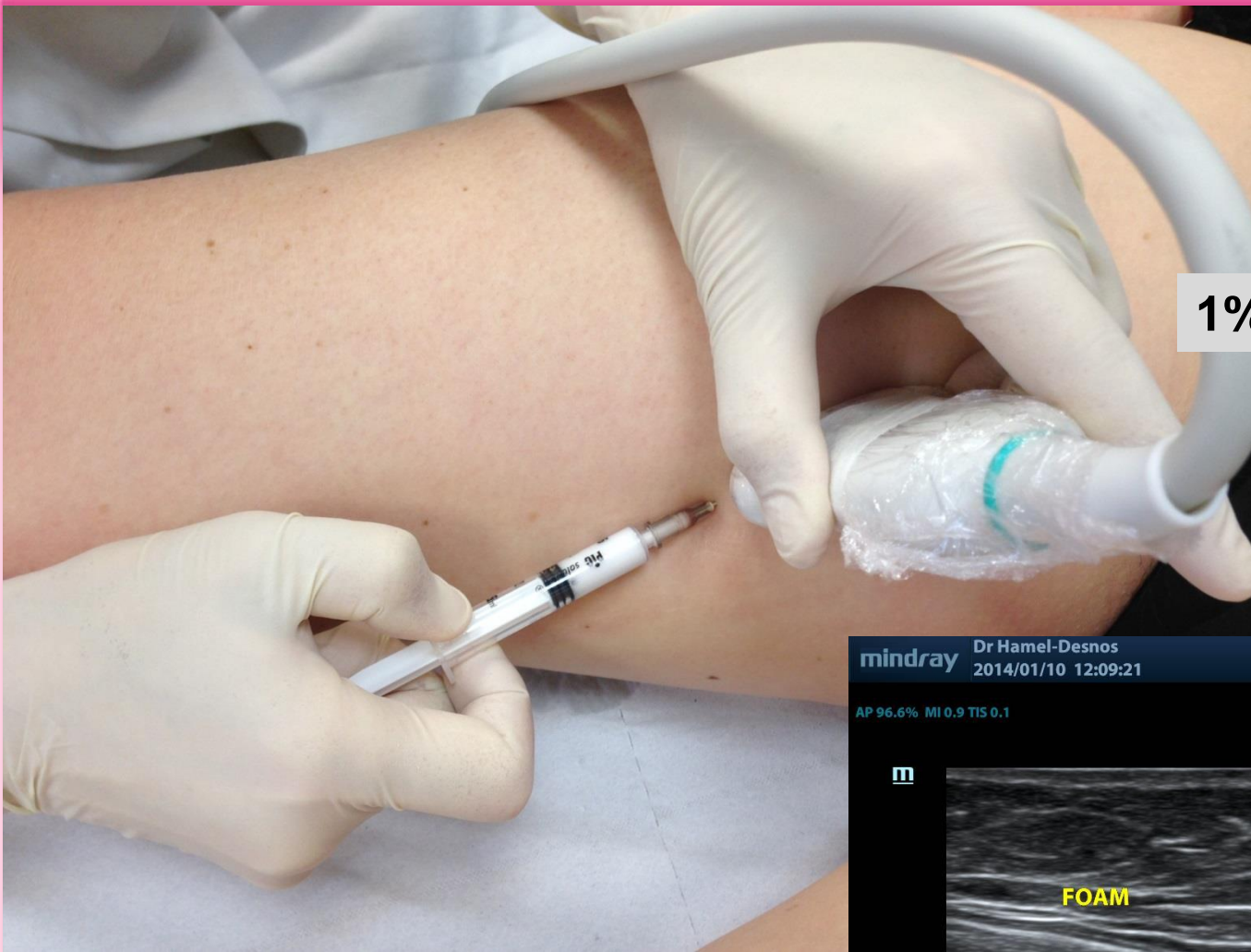
GSV
1st inject.

SSV
1st inject.

TOTAL VOLUME DEPENDS ON THE FILLING AND THE SPASM OF THE VEIN (inject one syringe of 2.5 ml and see)



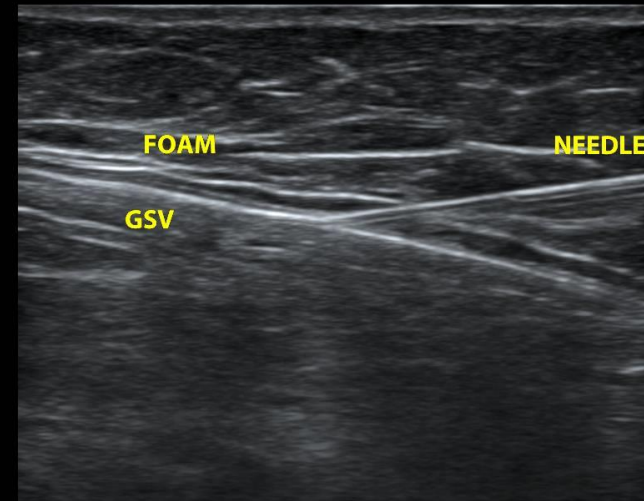
1% POL FOAM x 2.5 mL



mindray Dr Hamel-Desnos 2014/01/10 12:09:21 20140110-163728-252D L12-3E / Veine Superficiel

AP 96.6% MI 0.9 TIS 0.1

m



DC-8

B
F 10.0
D 3.0
G 58
FR 27
DR 100
iClear 3
iBeam 1

-0

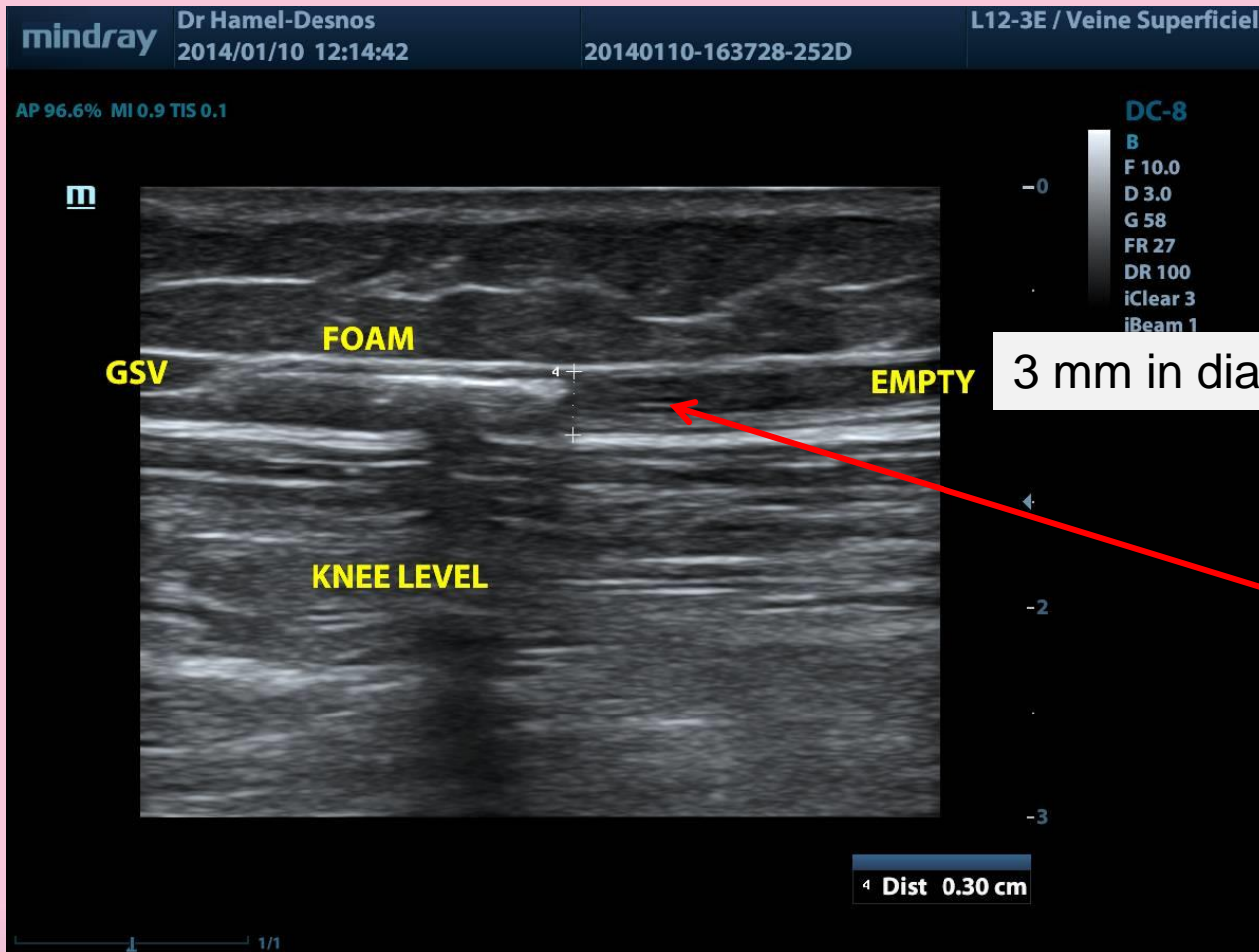
-1

-2

-3

**First injection on thigh level
(proximal part of GSV;
initial diam. 6 mm in standing
position)**

After the first injection look at the limit of the spasm and of the filling (in this example, the foam stops just above the knee)

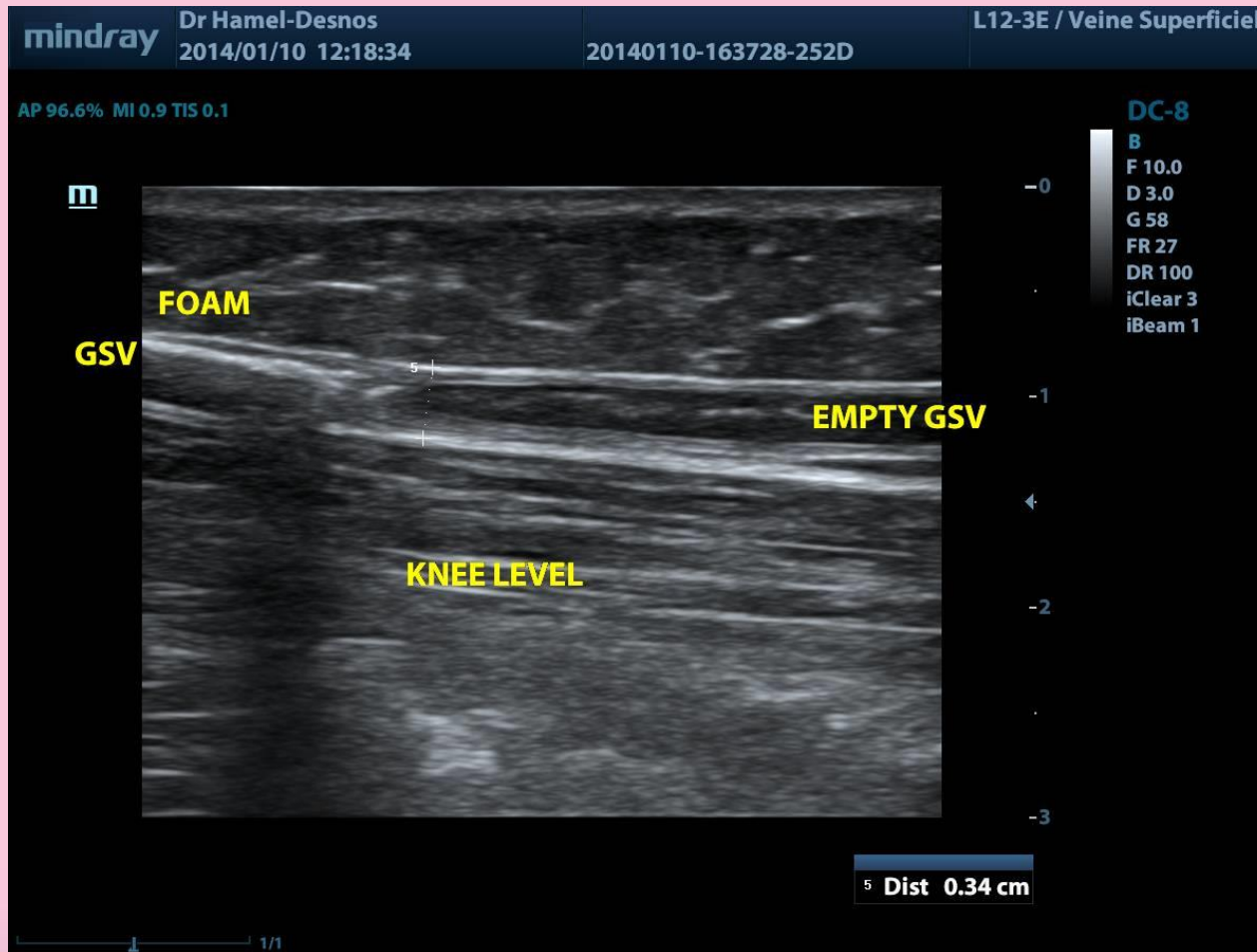


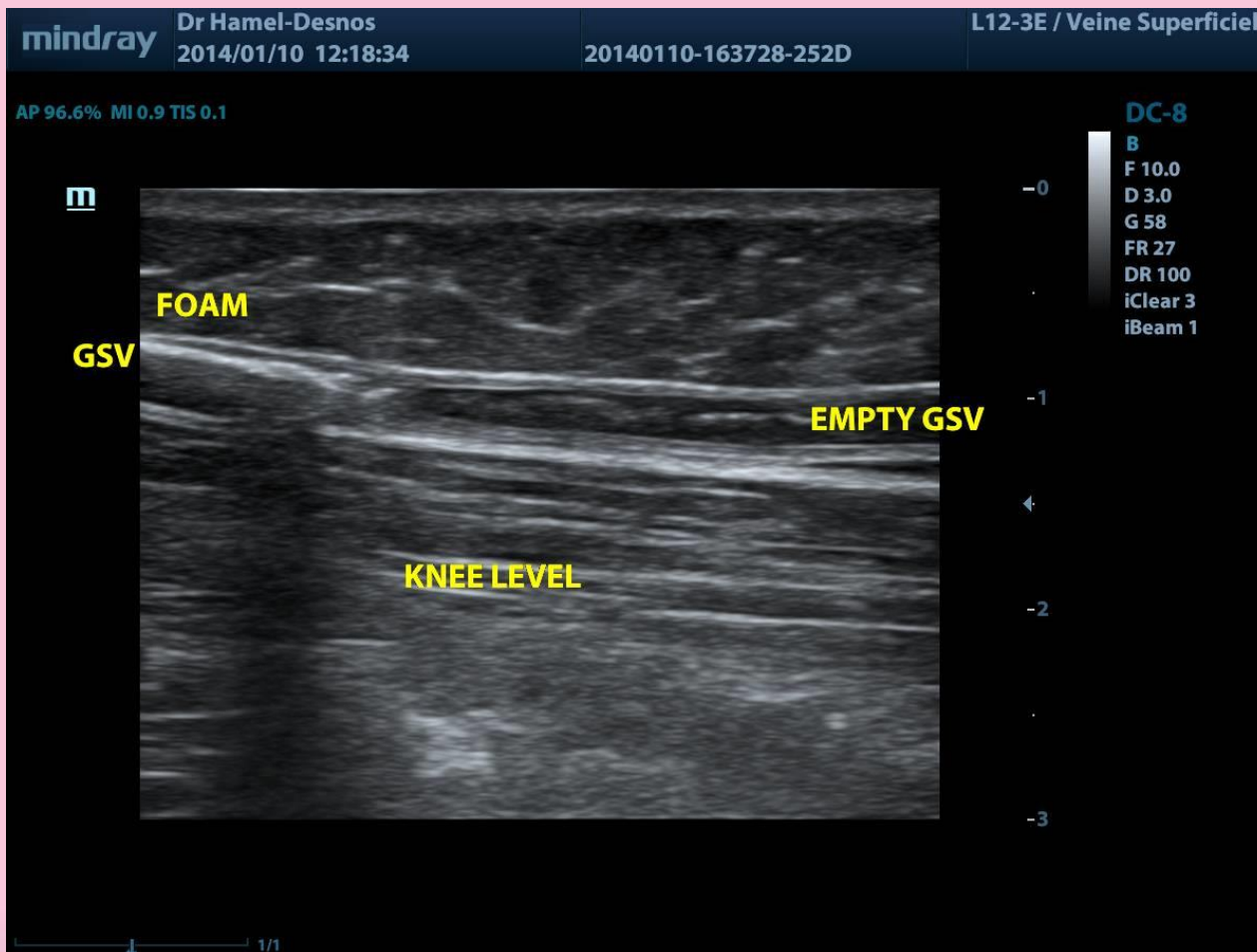
Second injection

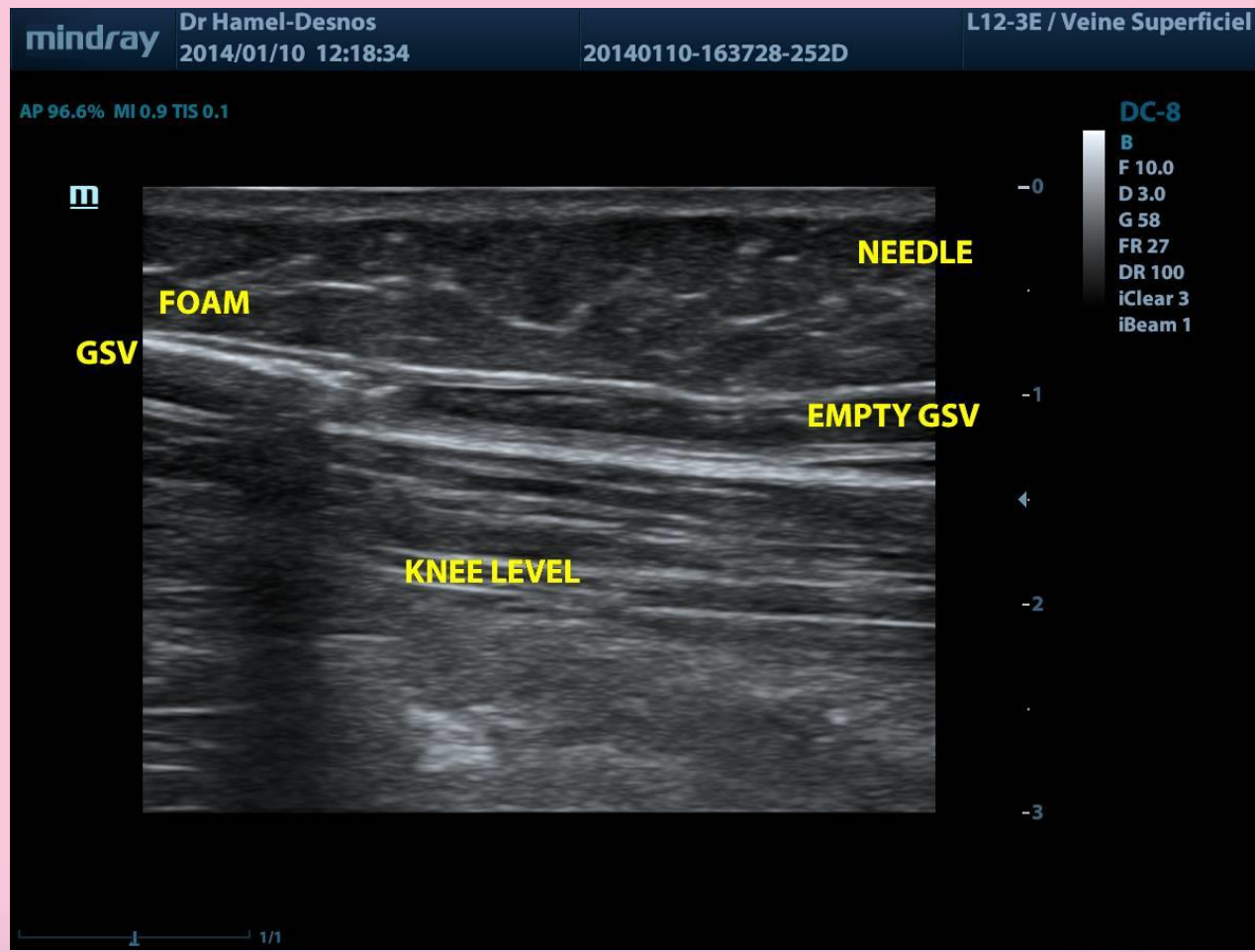


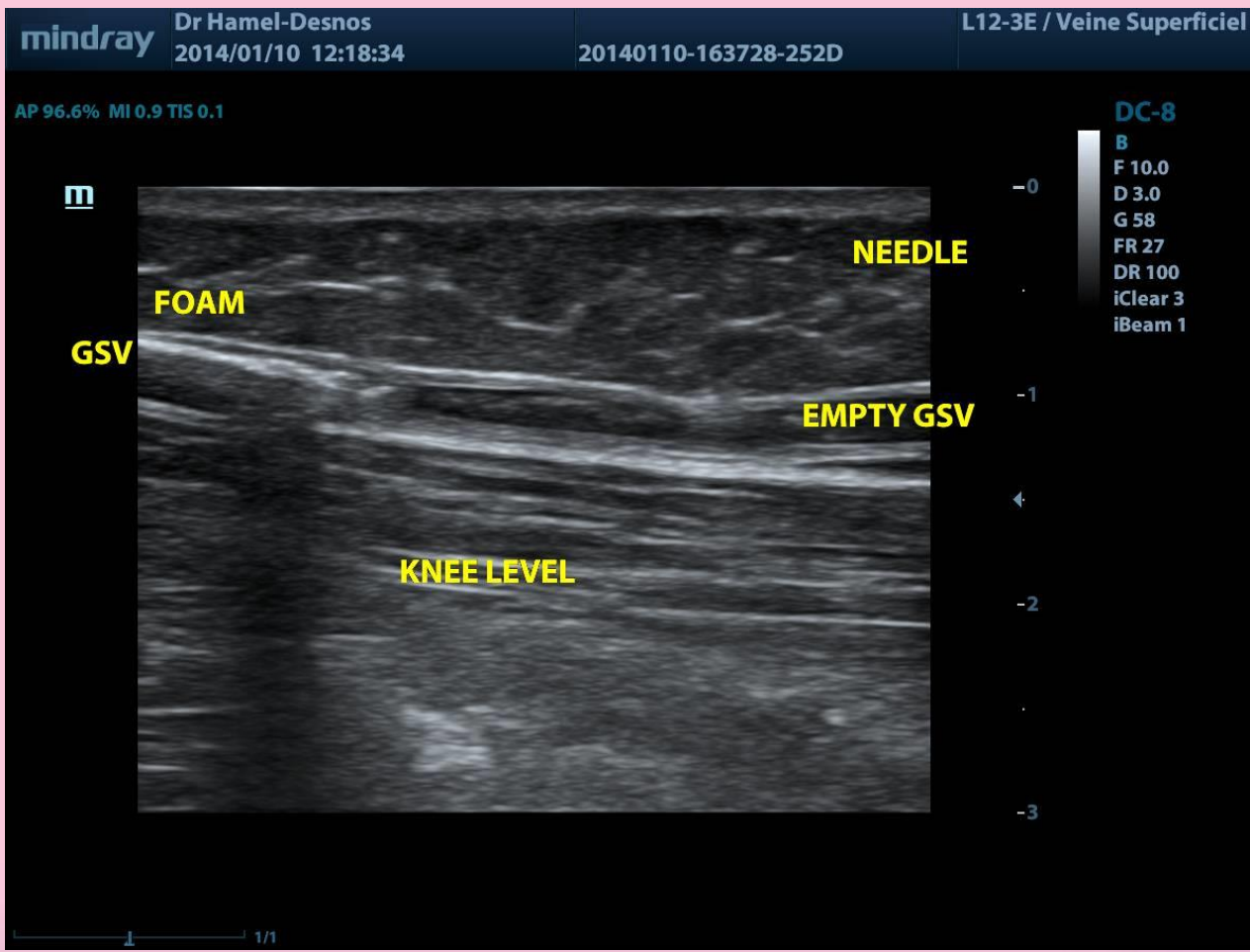
0.5% POL FOAM x 2.5 mL

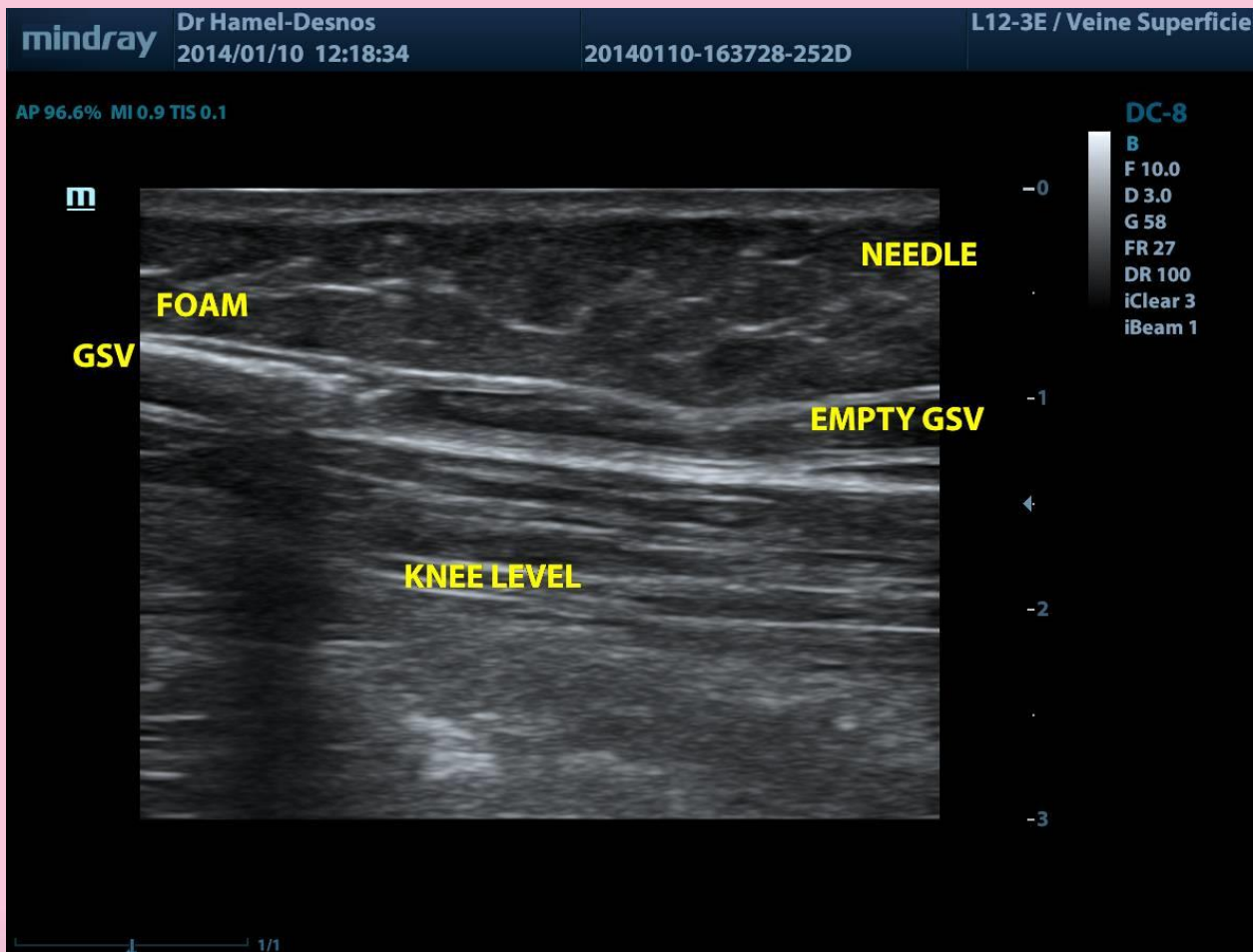
Second injection

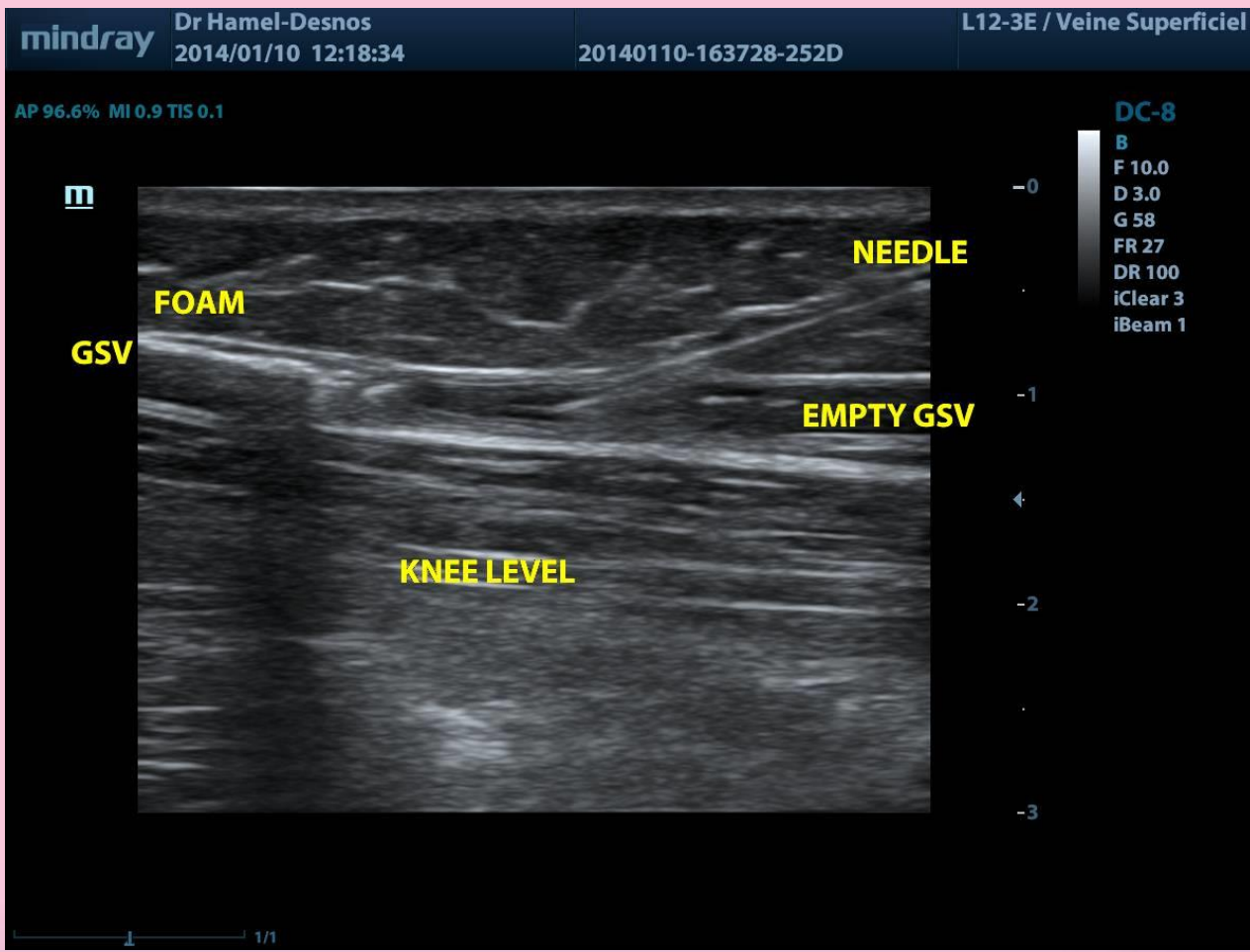












mindray Dr Hamel-Desnos 2014/01/10 12:18:34 20140110-163728-252D L12-3E / Veine Superficiel

AP 96.6% MI 0.9 TIS 0.1

m

FOAM

GSV

NEEDLE

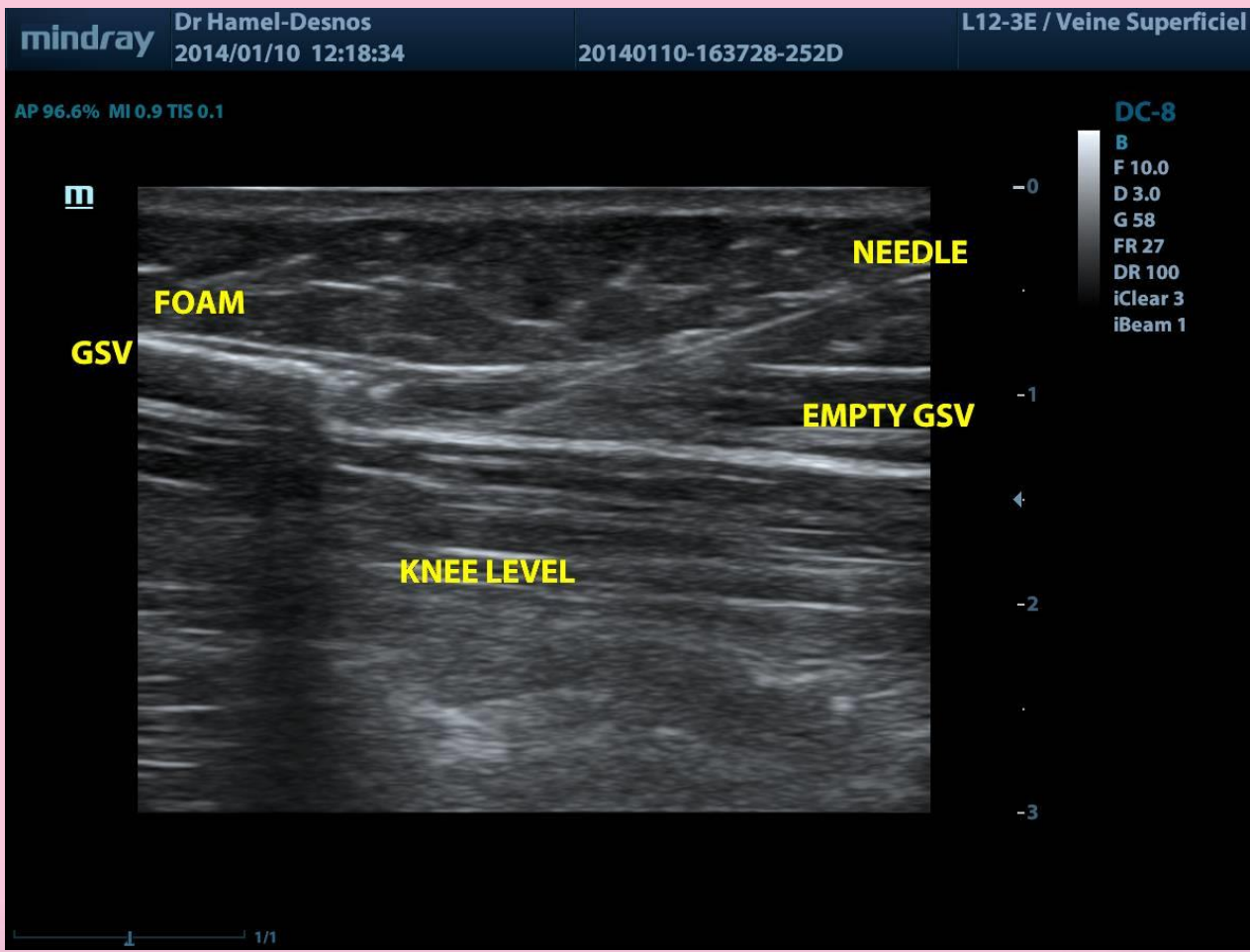
EMPTY GSV

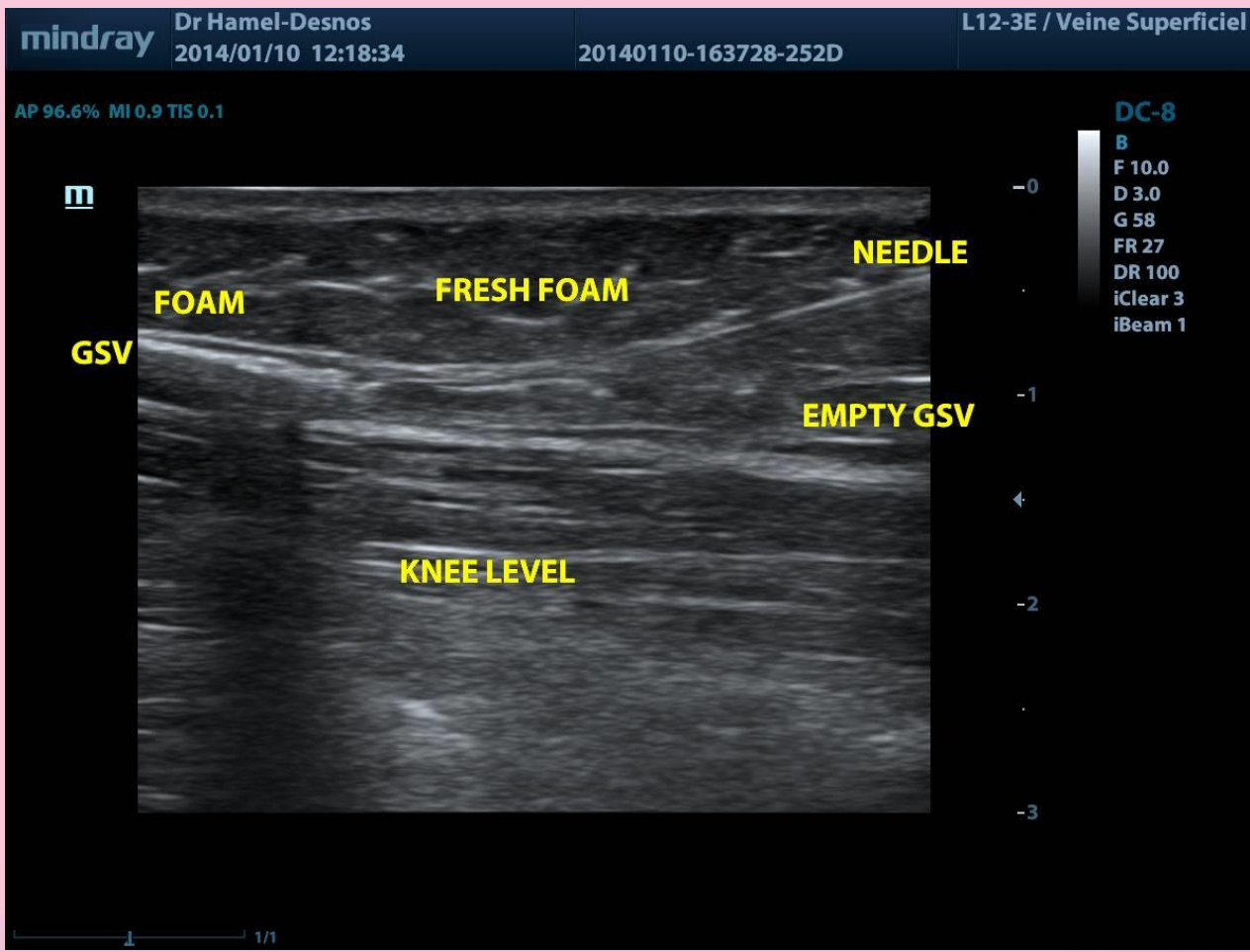
KNEE LEVEL

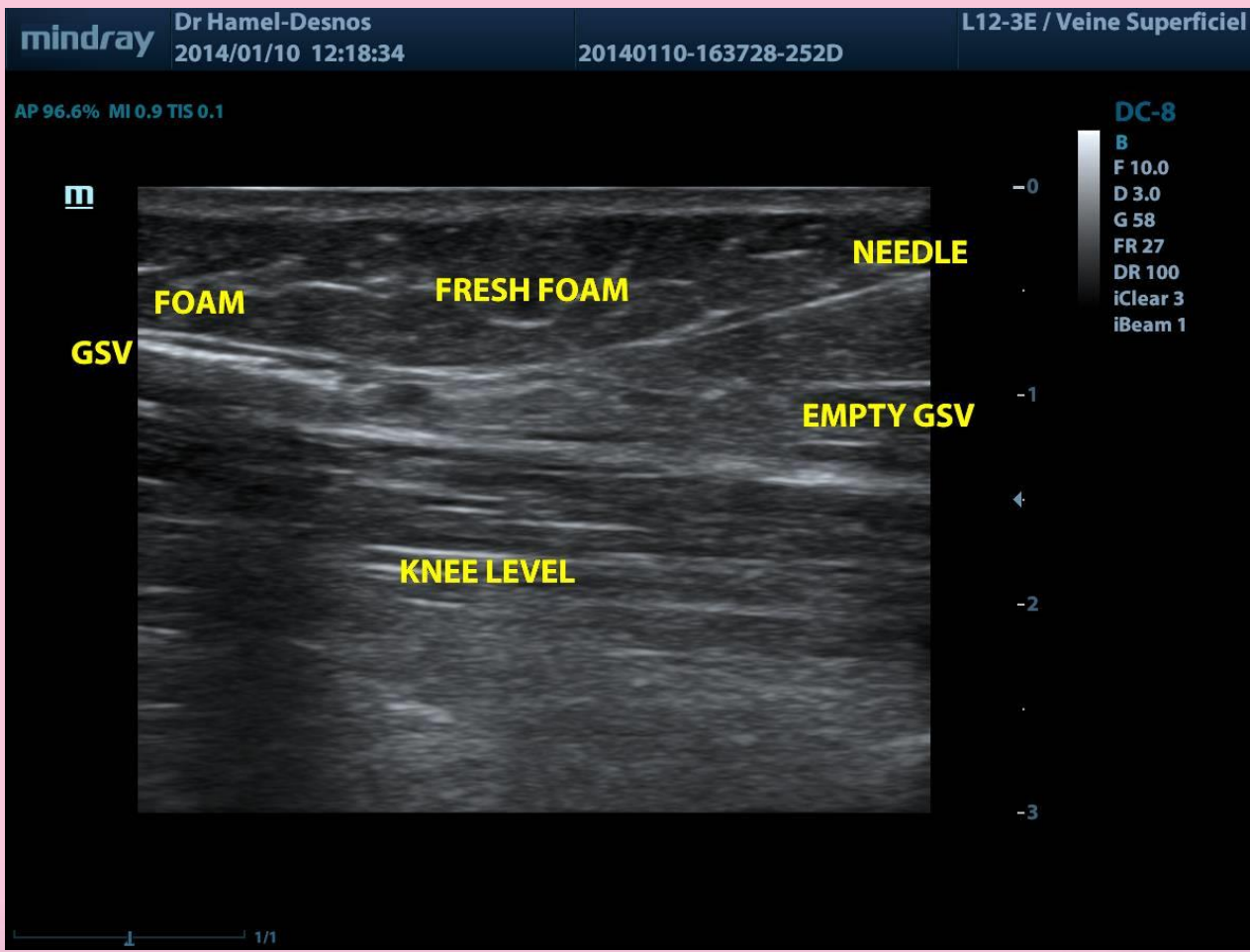
DC-8
B
F 10.0
D 3.0
G 58
FR 27
DR 100
iClear 3
iBeam 1

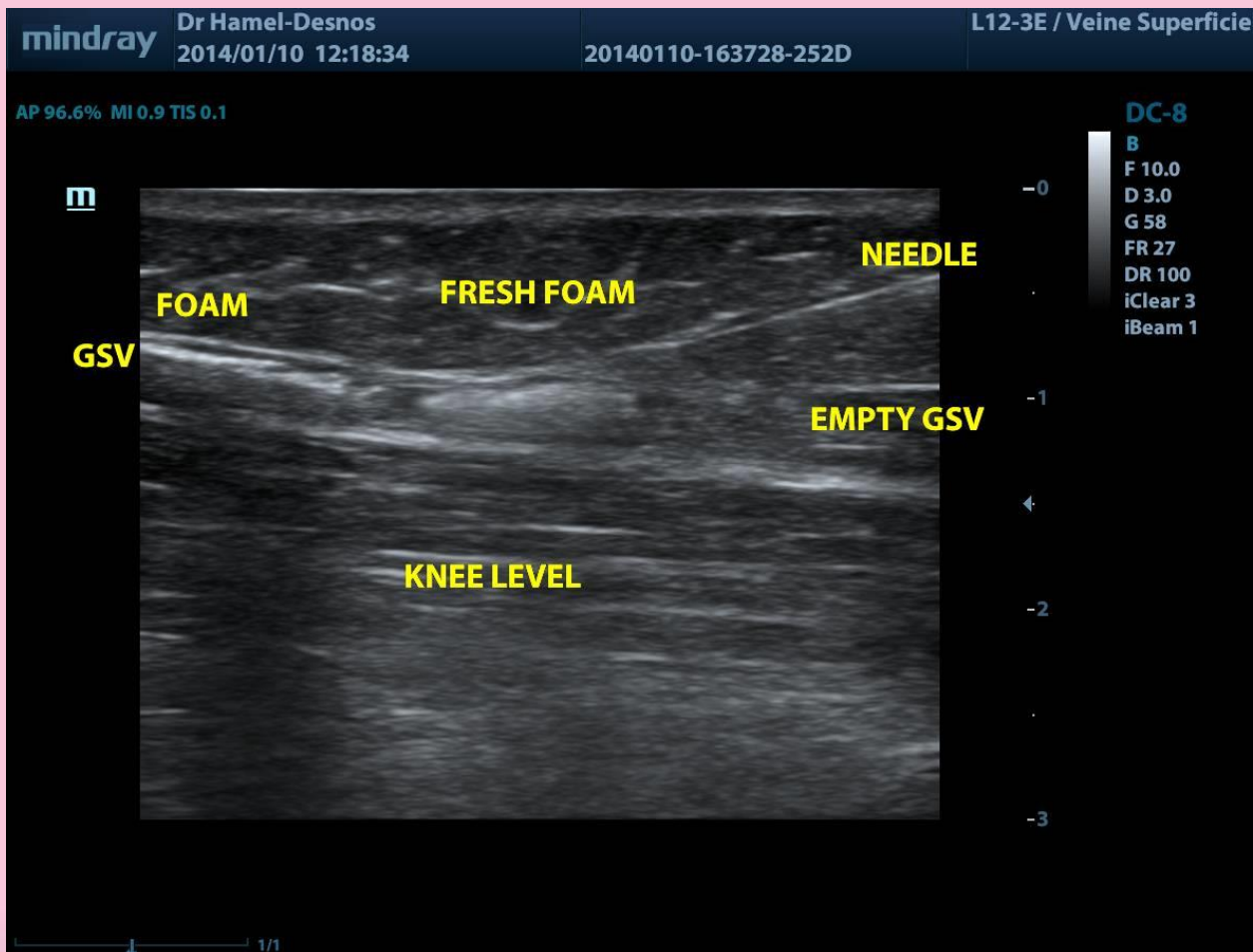
-0
-1
-2
-3

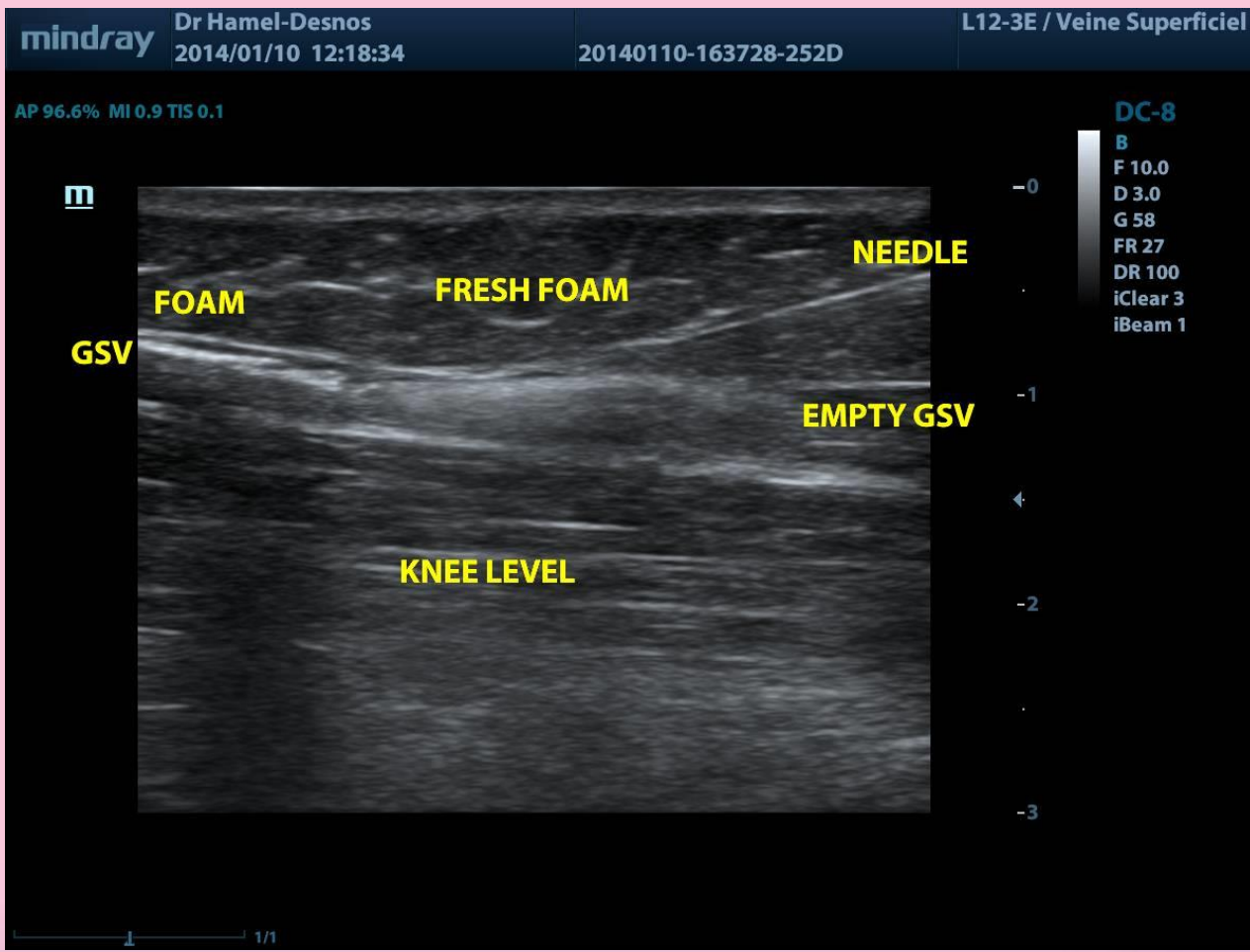
1 1/1

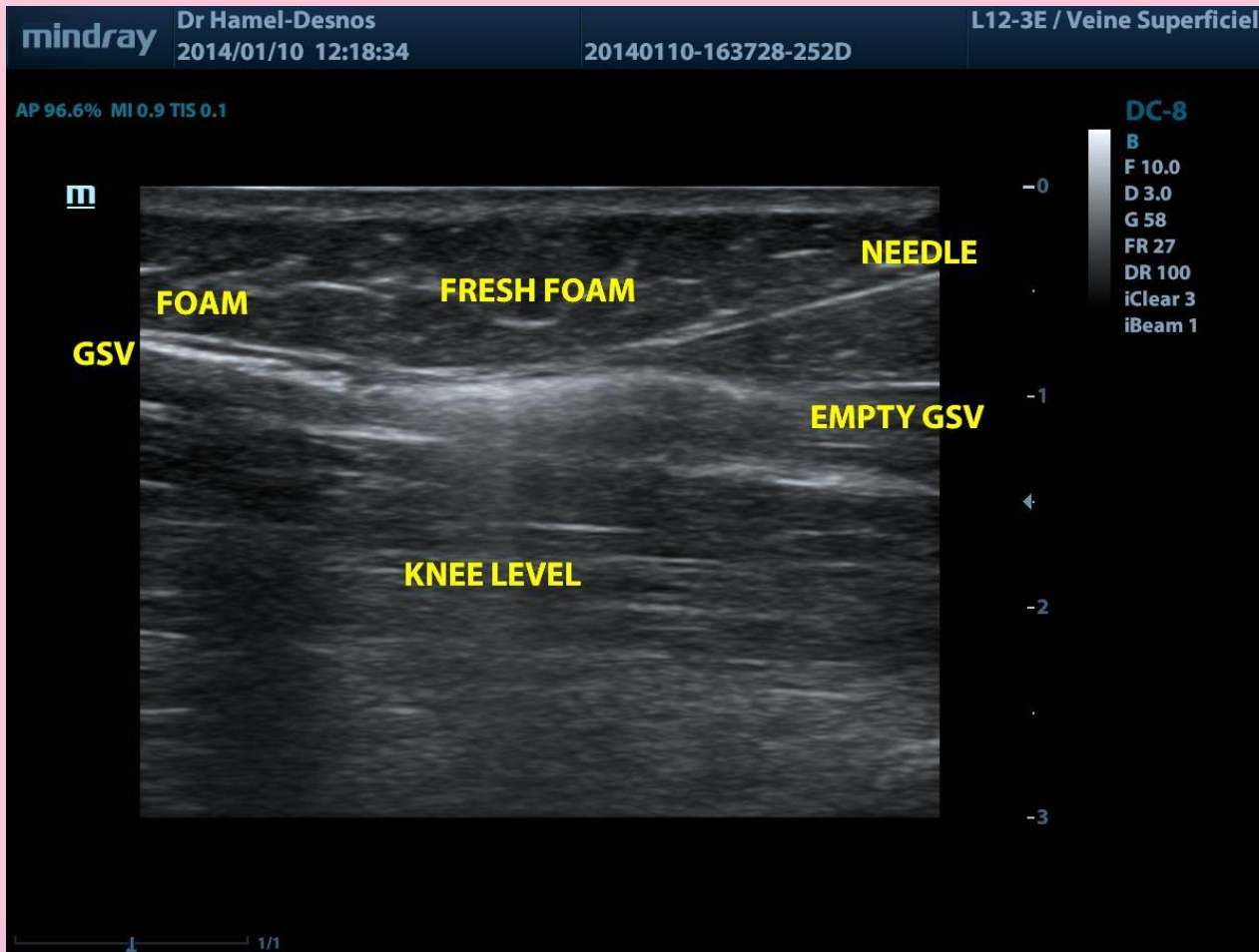


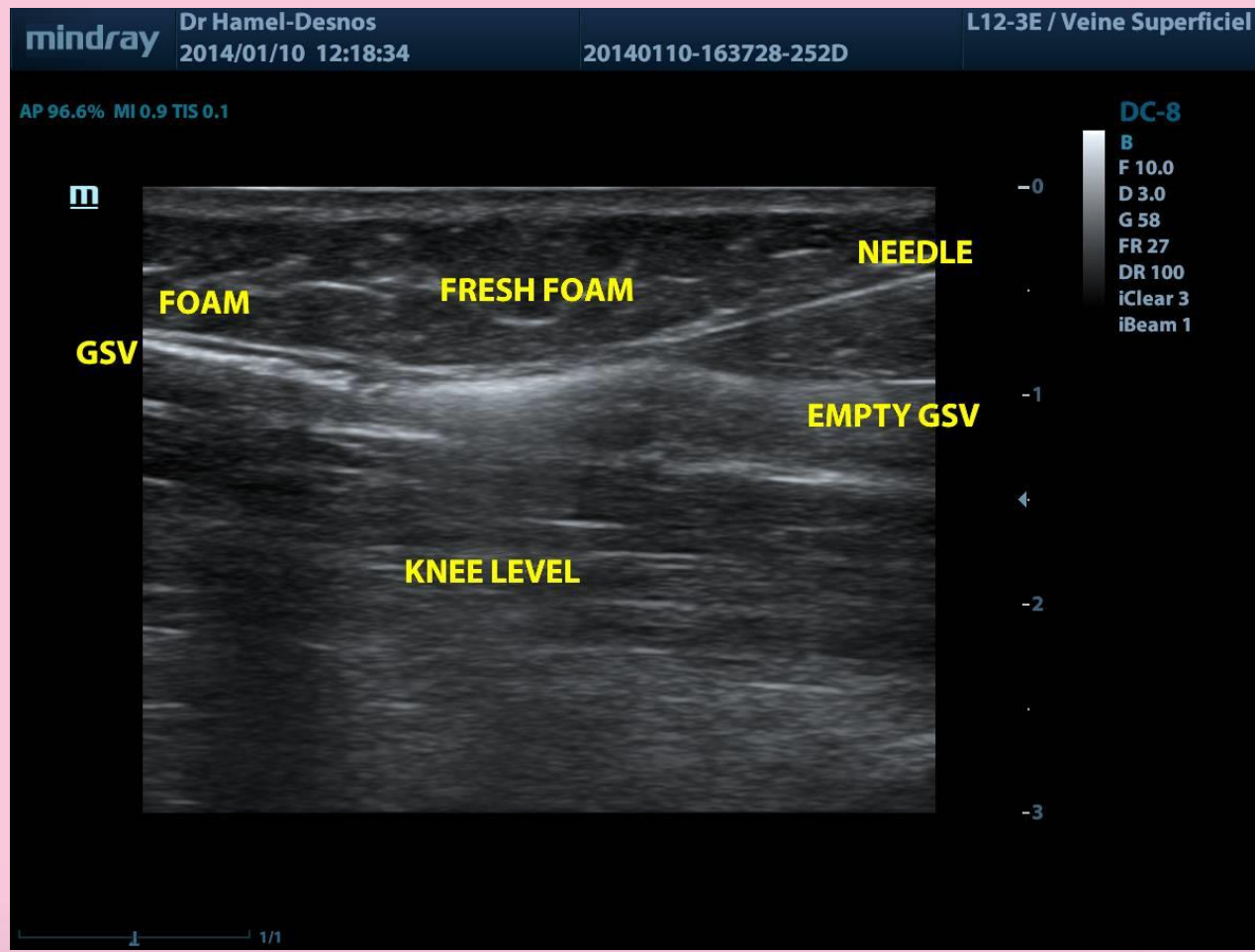


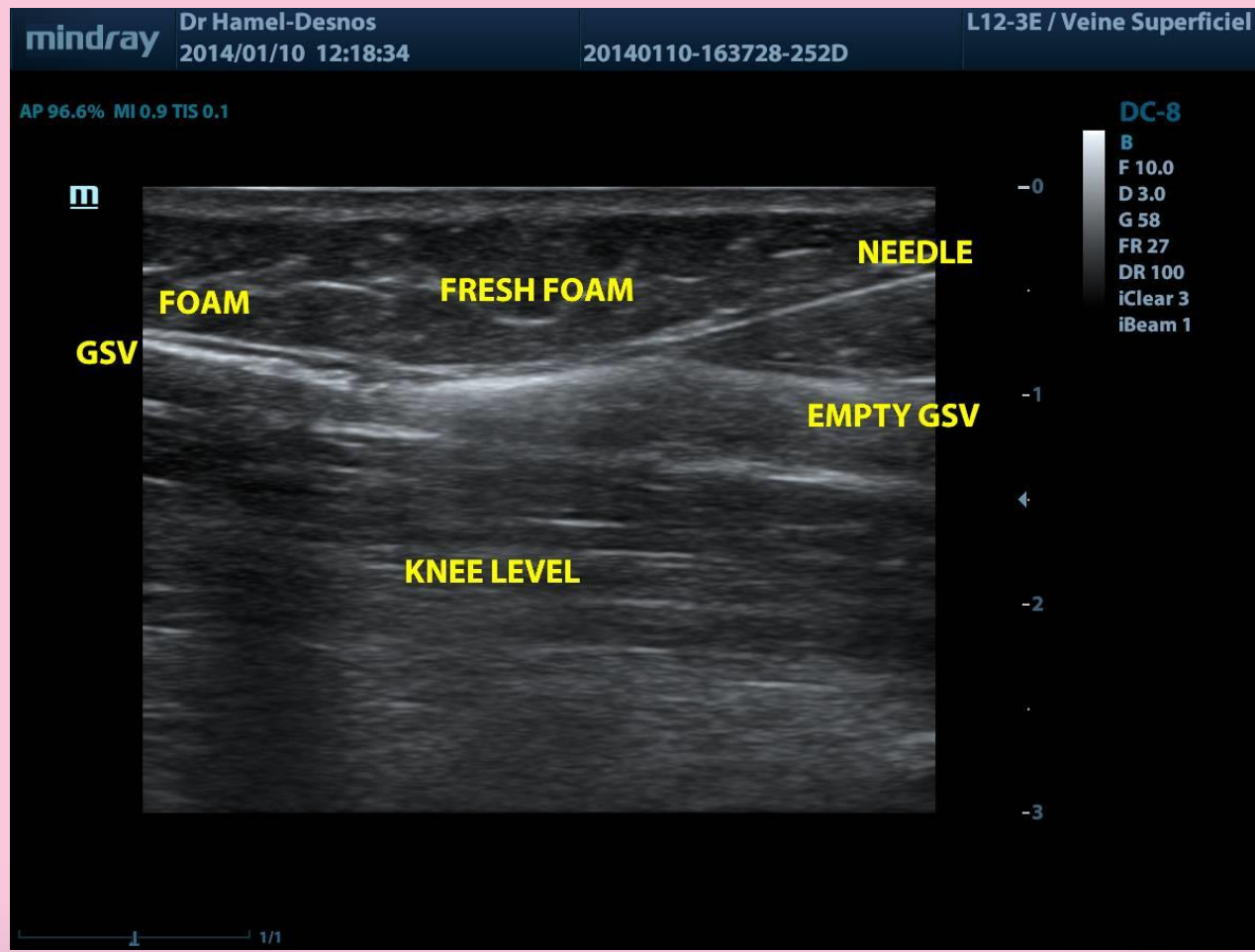


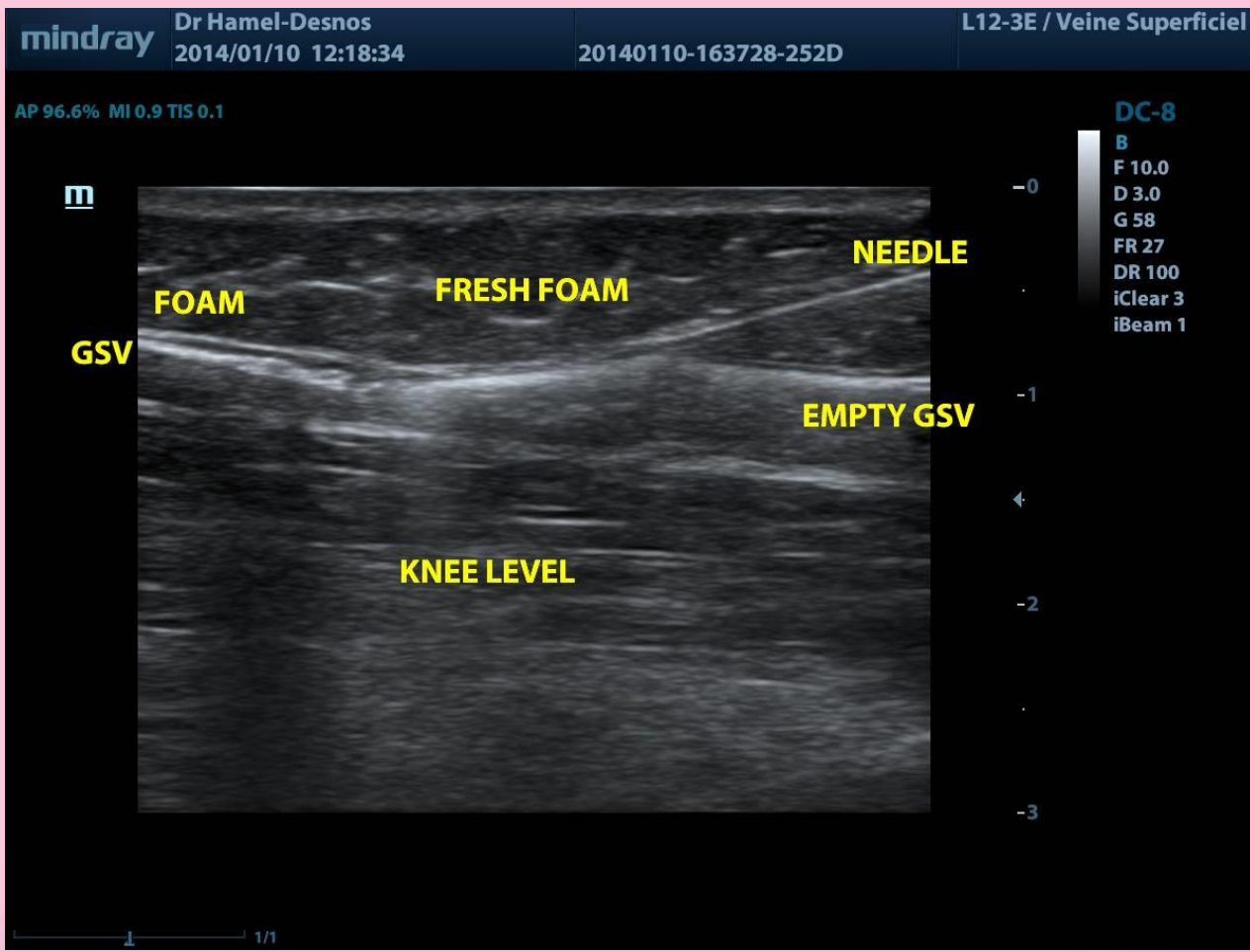


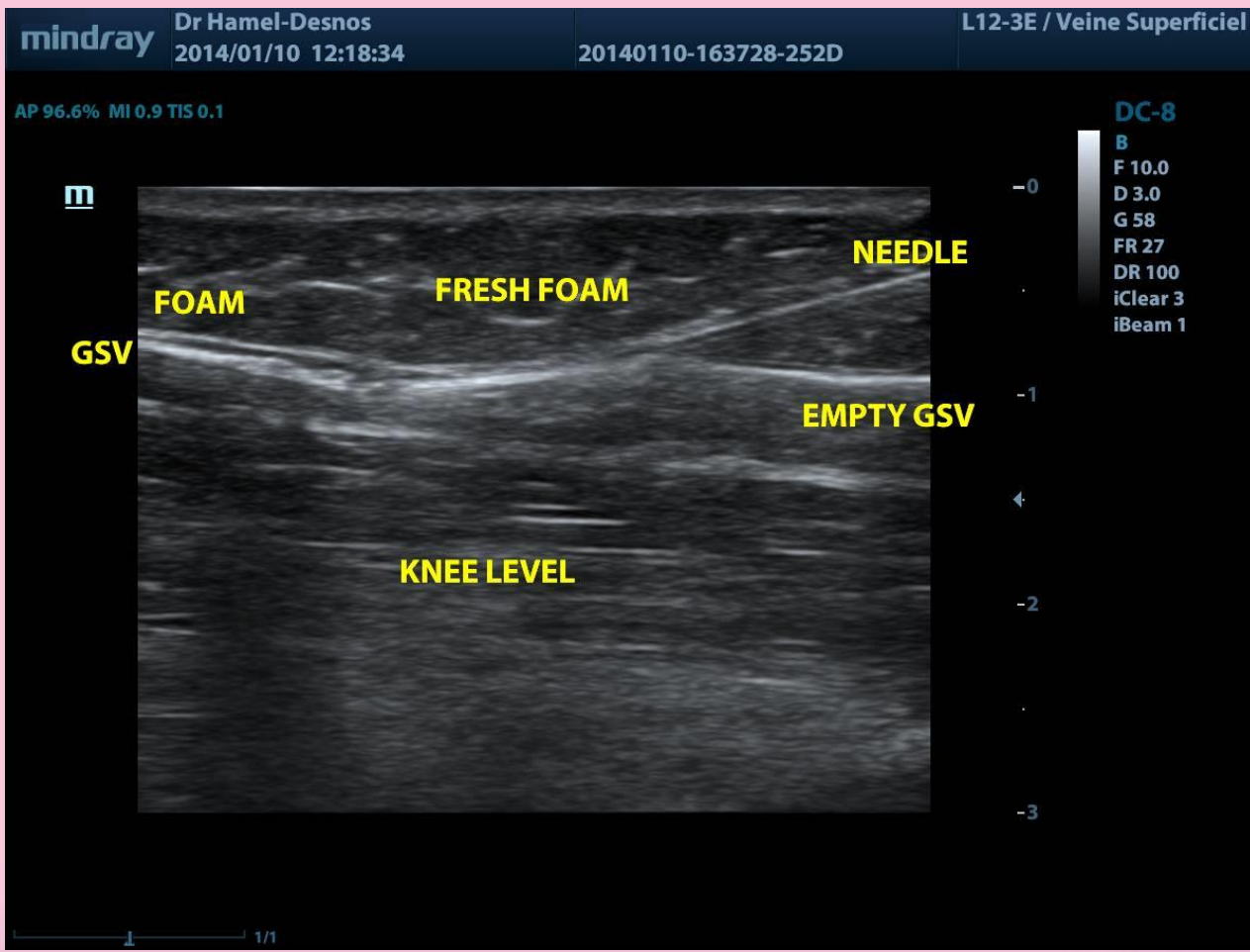


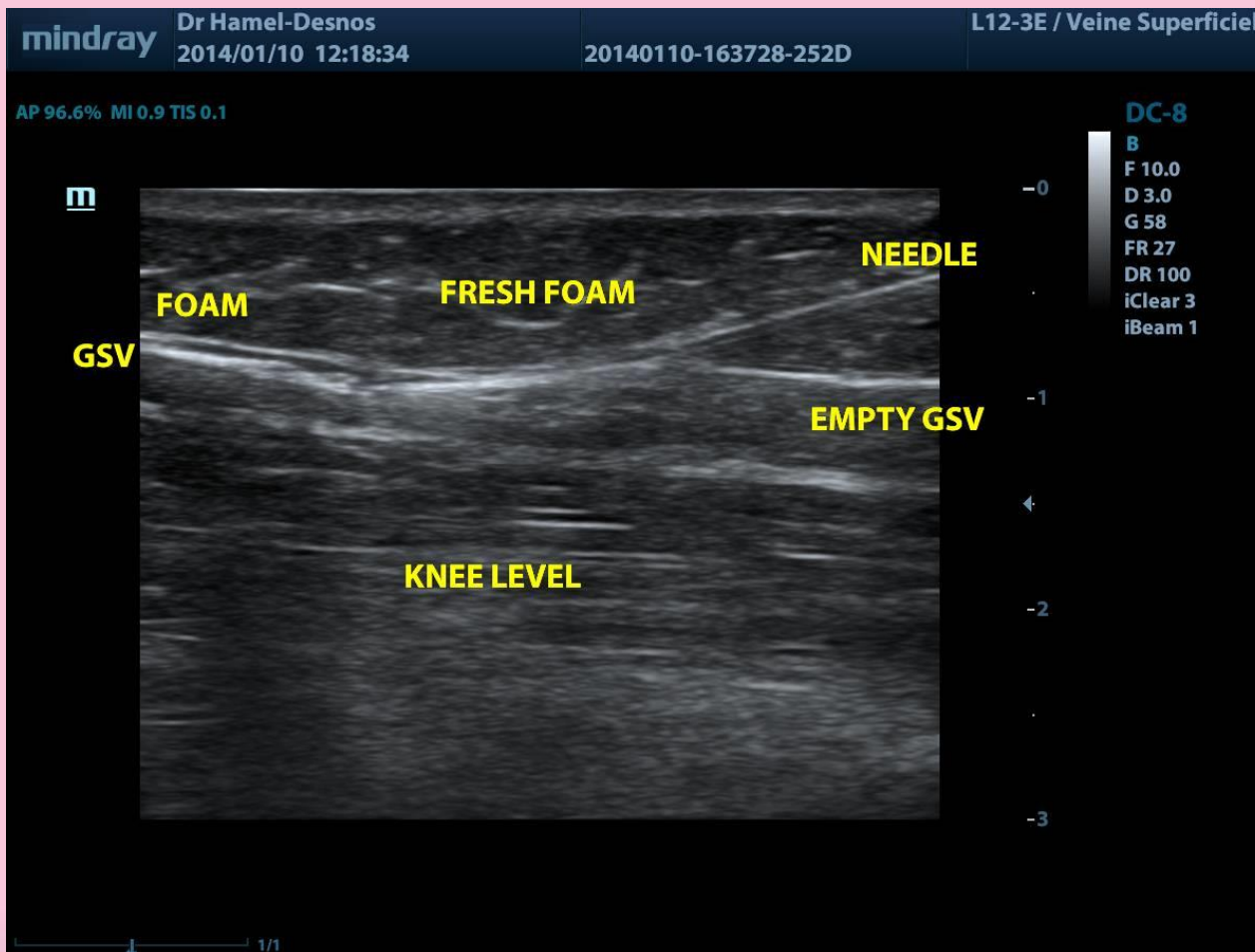


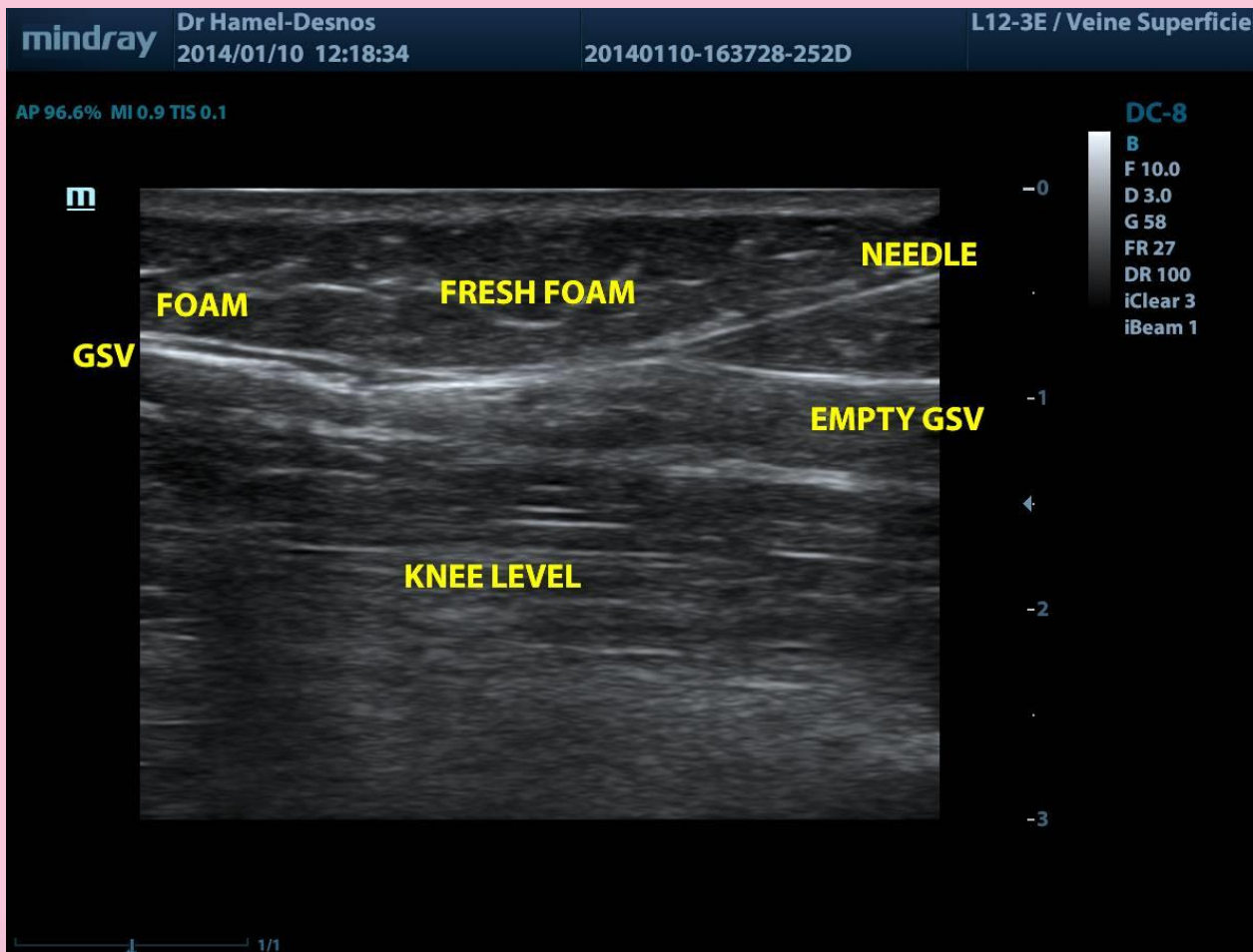


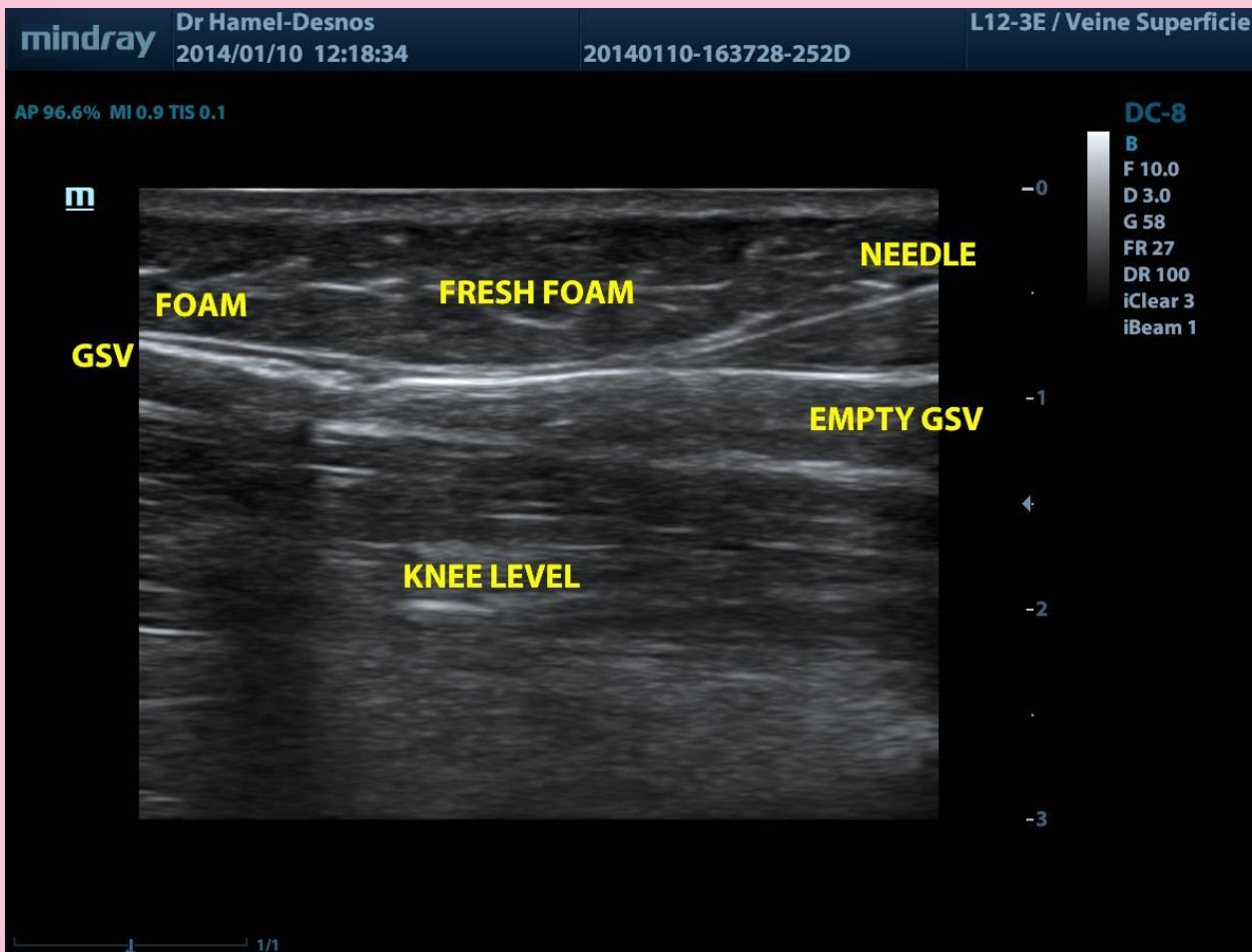


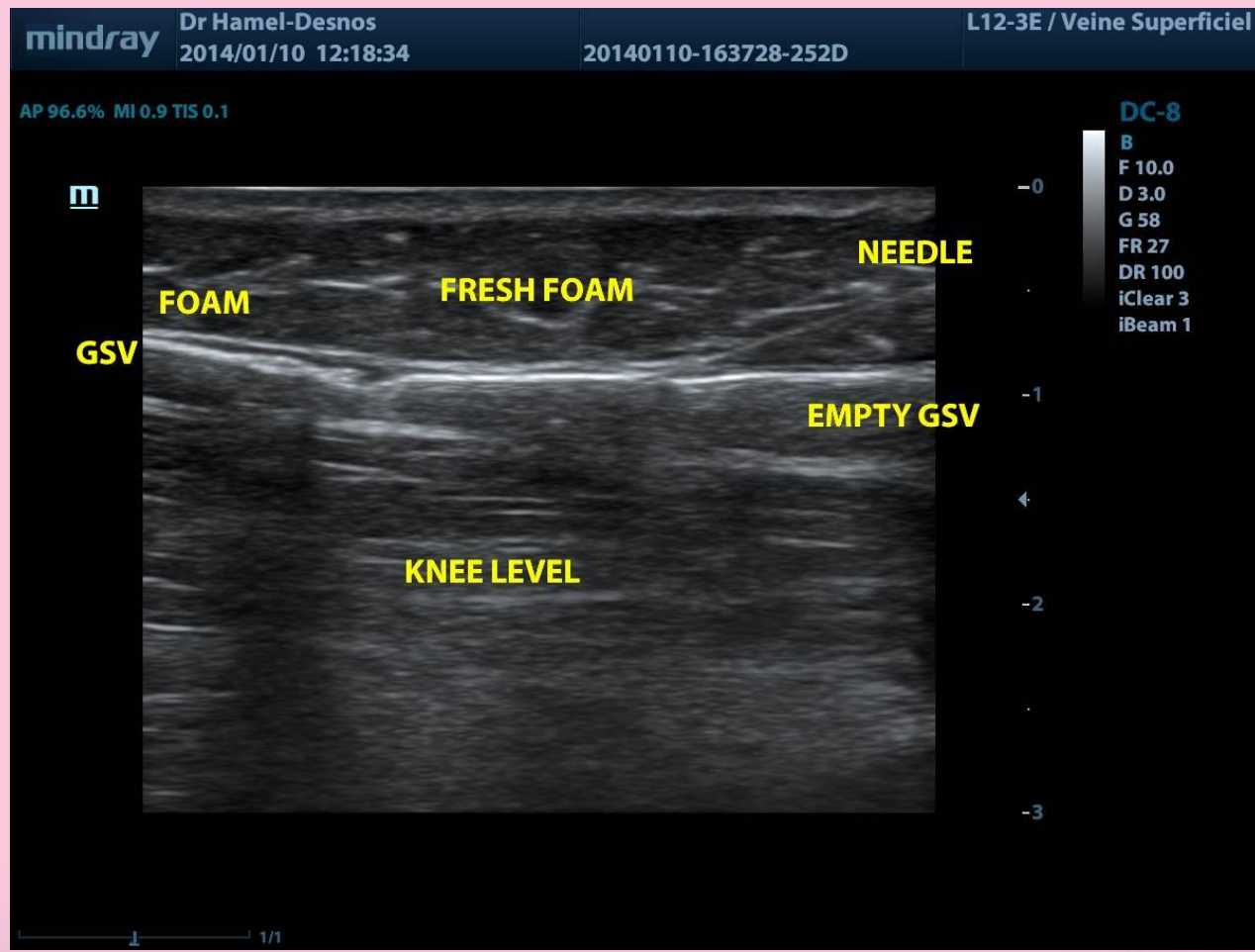












mindray Dr Hamel-Desnos 2014/01/10 12:18:34 20140110-163728-252D L12-3E / Veine Superficiel

AP 96.6% MI 0.9 TIS 0.1

m

FOAM **FRESH FOAM** **NEEDLE**

GSV **EMPTY GSV**

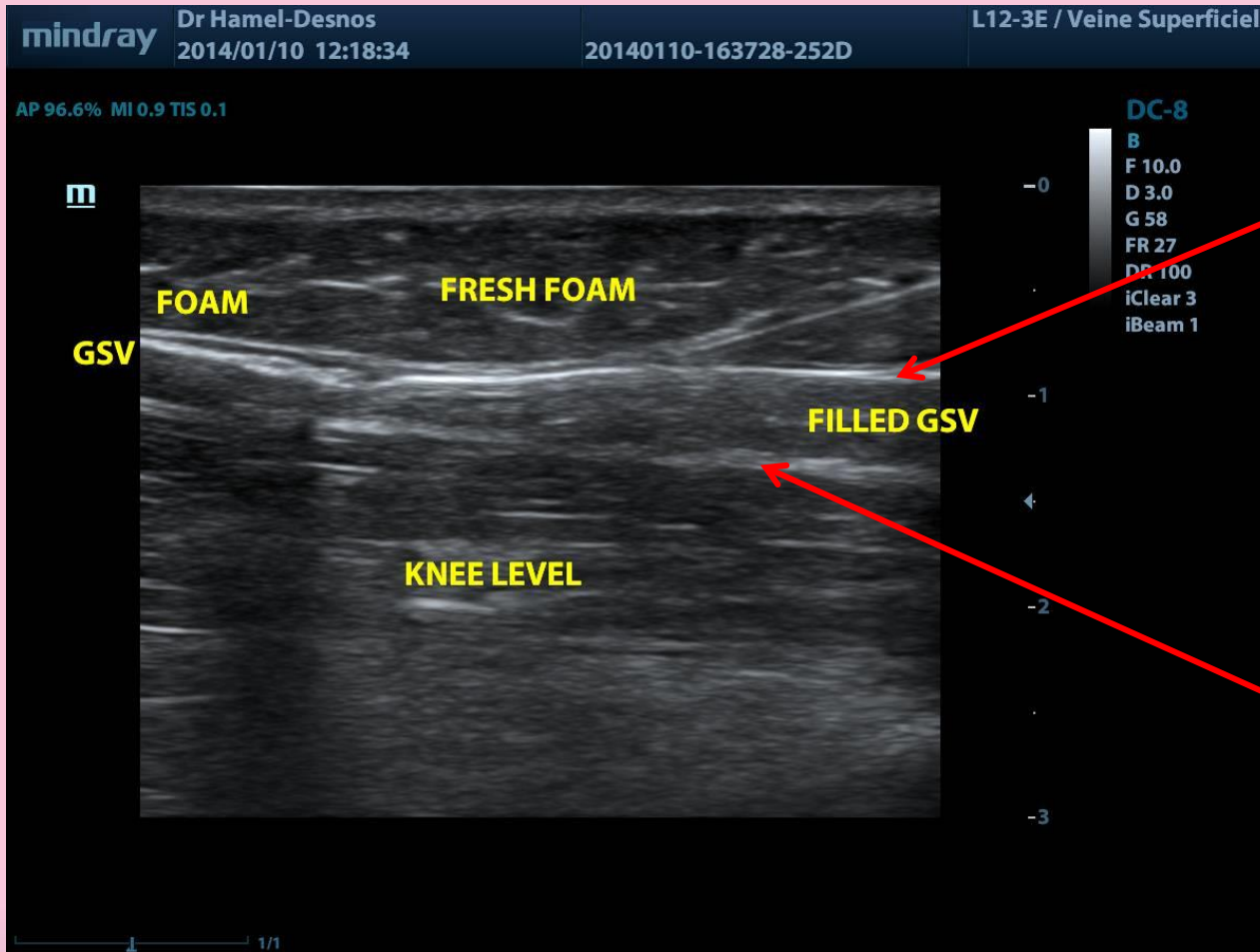
KNEE LEVEL

DC-8
B
F 10.0
D 3.0
G 58
FR 27
DR 100
iClear 3
iBeam 1

-0
-1
-2
-3

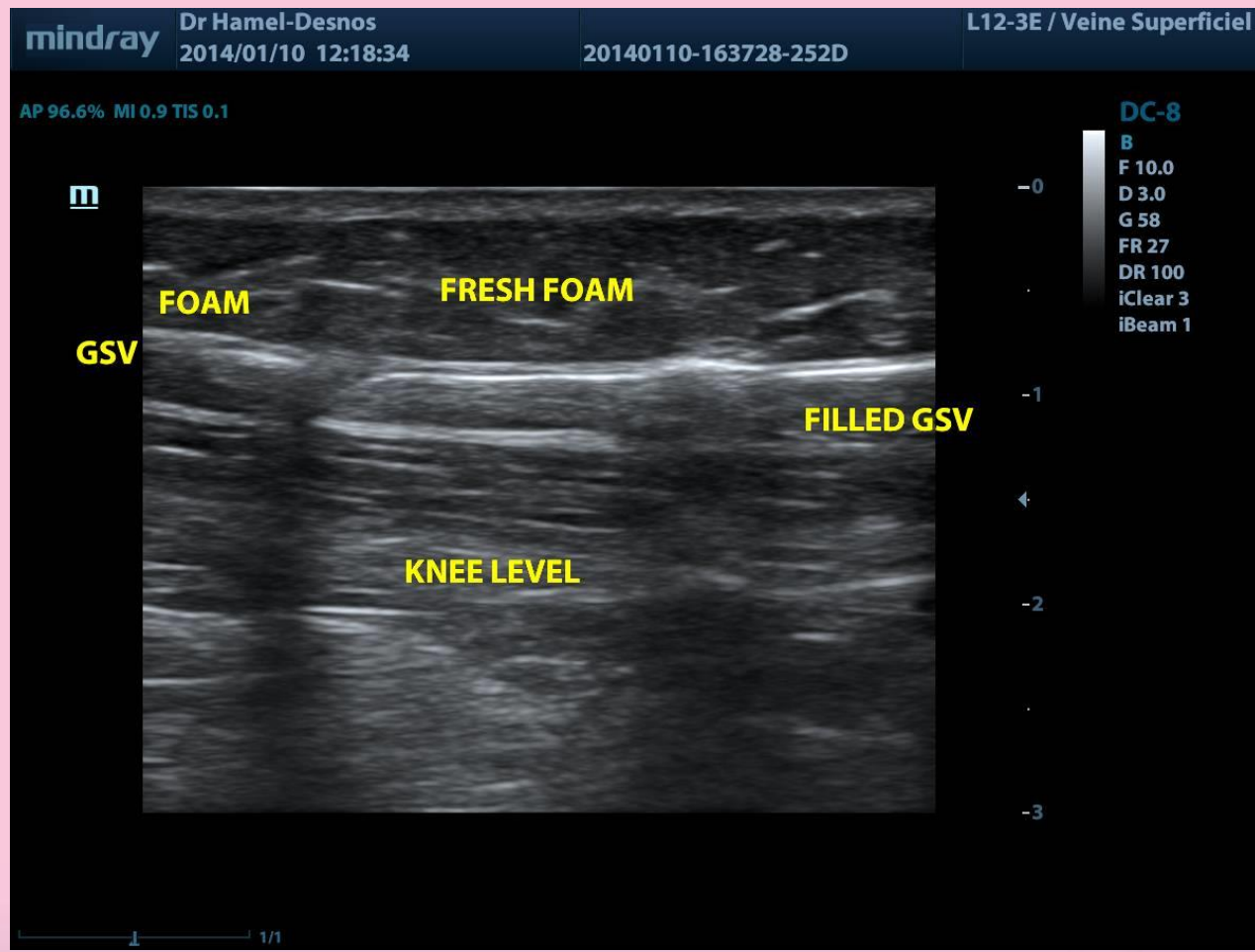
1/1

Detailed description: This is a B-mode ultrasound image showing a cross-section of a vein. The vein lumen is on the left, labeled 'GSV'. A needle is visible on the right, labeled 'NEEDLE'. The vein wall is labeled 'EMPTY GSV'. The image shows a large area of echogenic material, labeled 'FOAM' and 'FRESH FOAM'. A horizontal line across the middle of the vein is labeled 'KNEE LEVEL'. The image is displayed on a Mindray DC-8 ultrasound machine. The top of the screen shows patient information: 'Dr Hamel-Desnos', date '2014/01/10 12:18:34', and ID '20140110-163728-252D'. The top right corner indicates the probe and vein type: 'L12-3E / Veine Superficiel'. The left side of the screen shows 'AP 96.6% MI 0.9 TIS 0.1' and a small 'm' icon. The right side shows a depth scale from -0 to -3 and technical parameters for the DC-8 machine: 'B', 'F 10.0', 'D 3.0', 'G 58', 'FR 27', 'DR 100', 'iClear 3', and 'iBeam 1'. At the bottom left, there is a scale bar and '1/1'.



**GSV
(SPASM)**

FASCIA





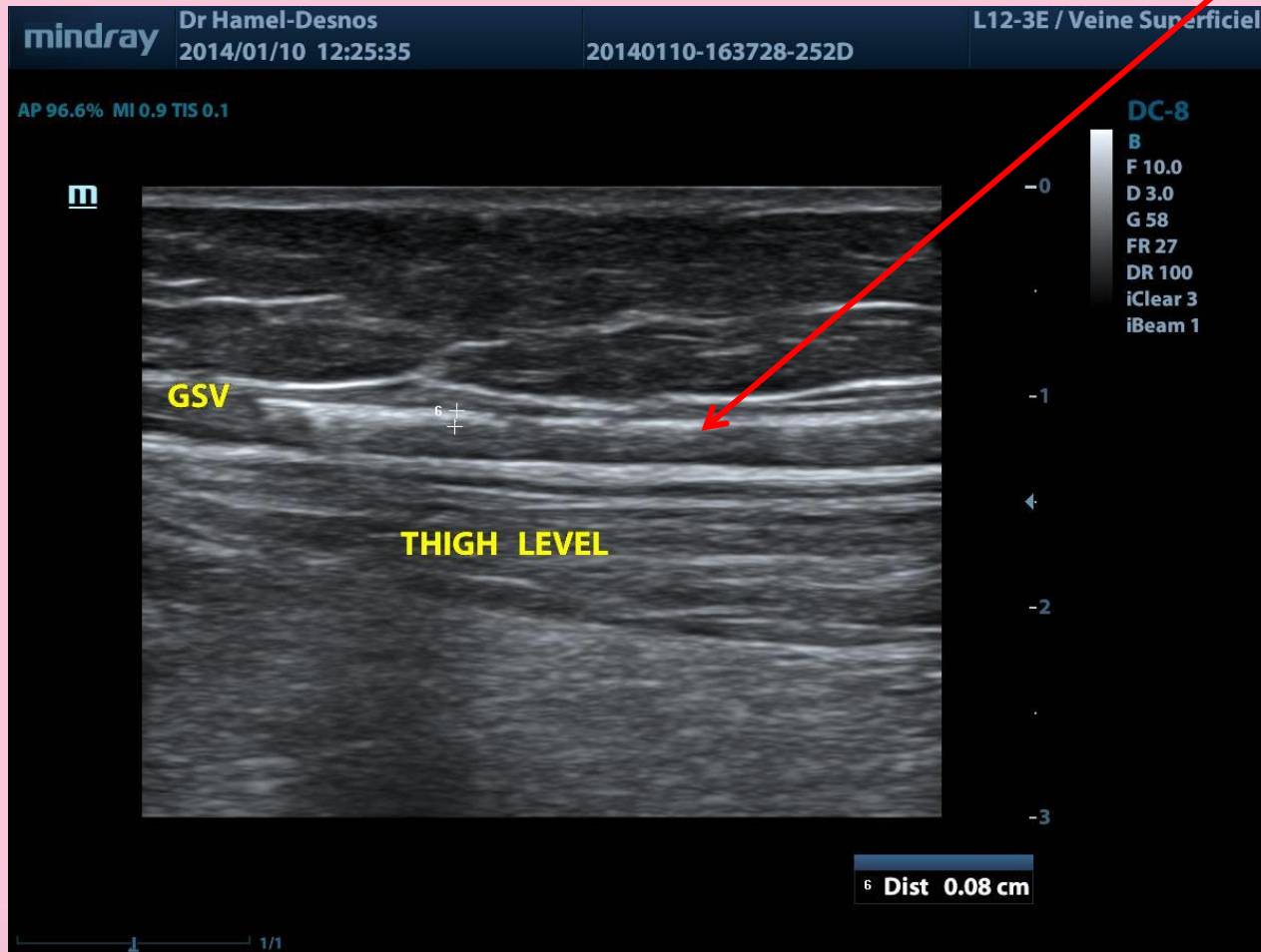
Immediate outcome

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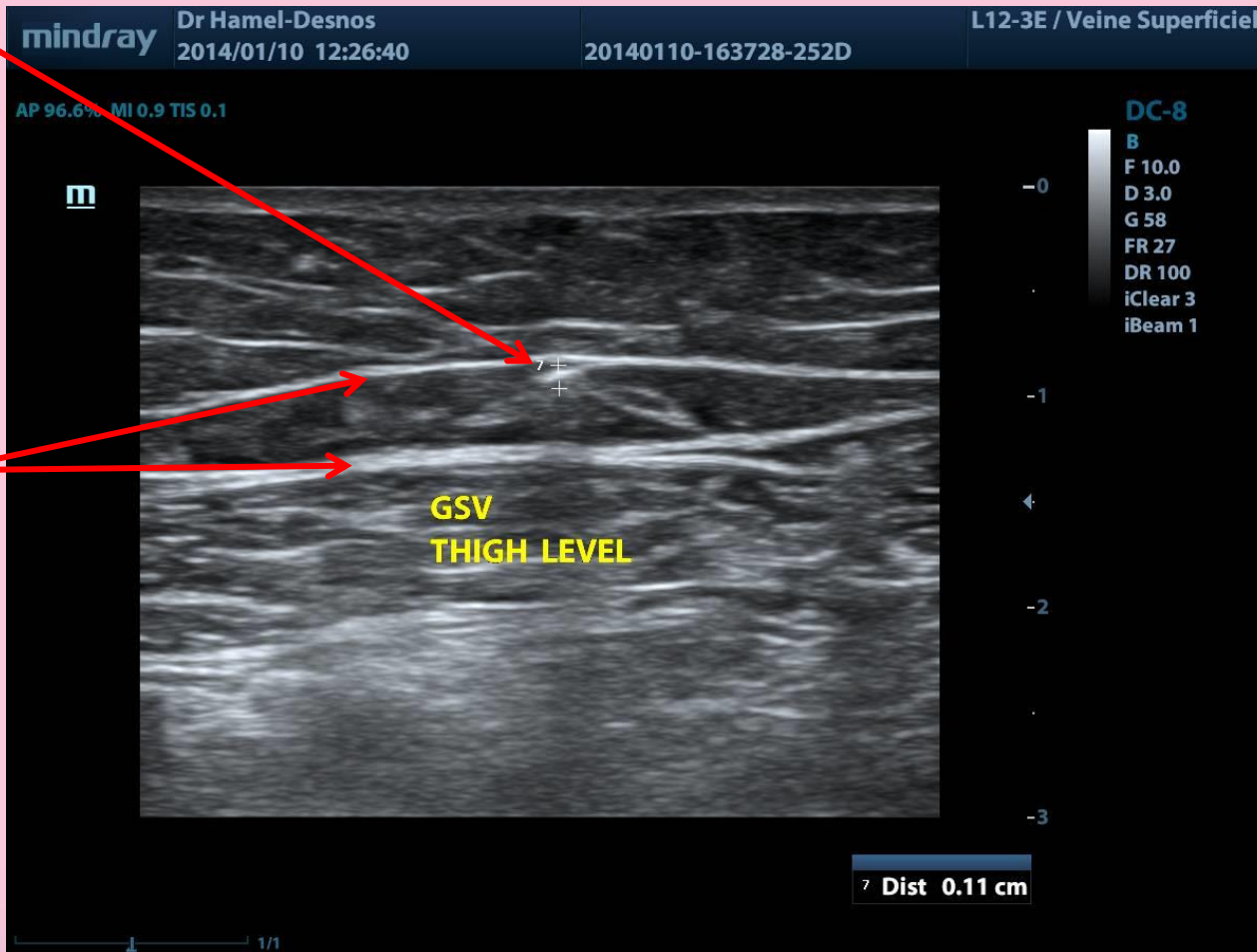
GSV longitudinal view thigh level

FOAM/ SPASM



Cross section

FOAM/ SPASM

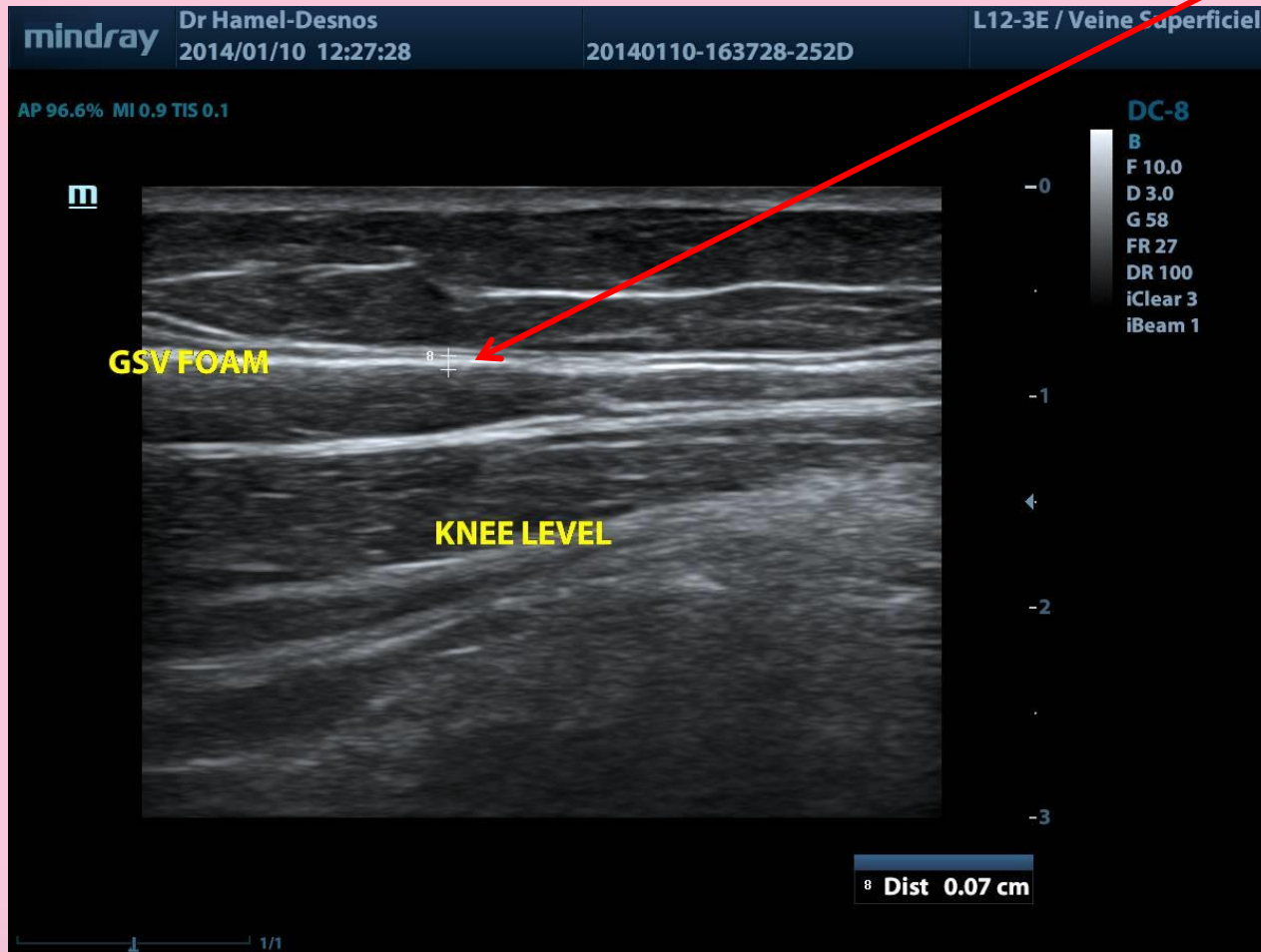


FASCIA

GSV Longitudinal view

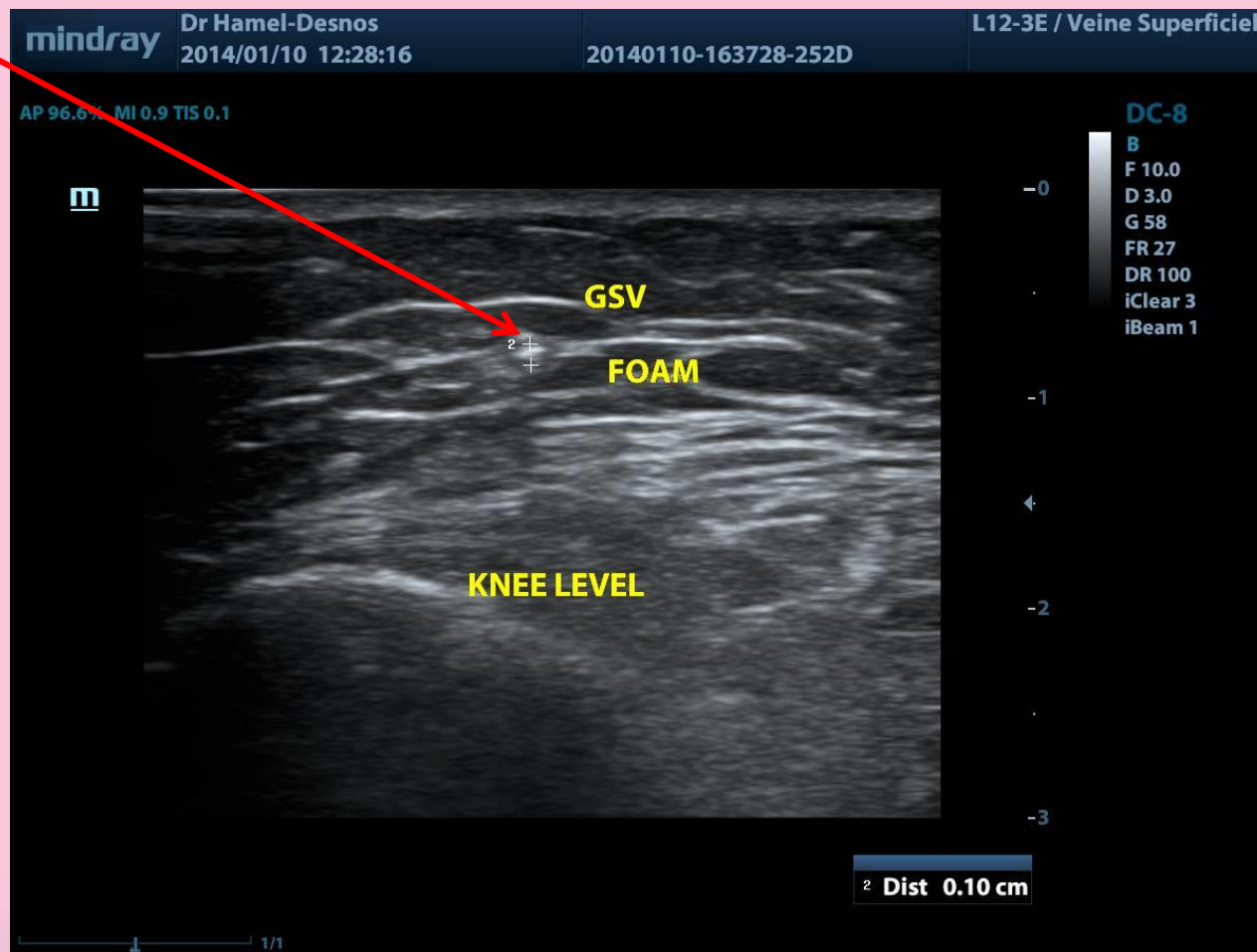
Knee level

FOAM/ SPASM





FOAM/ SPASM



End of treatment



5 mL OF POL FOAM IN TOTAL

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